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LEVEL II

Final Report

STATISTICAL ANALYSIS OF TERRAIN AND WATER (ICE) BACKGROUNDS IN A WINTER SCENE FROM NORTHERN MICHIGAN

ANTHONY J. LaROCCA
Infrared and Optics Division

OCTOBER 1979

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Prepared for:
Naval Weapons Center
China Lake, California
Contract No. N60530-79-R-0036

ENVIRONMENTAL RESEARCH INSTITUTE OF MICHIGAN
FORMERLY WILLOW RUN LABORATORIES, THE UNIVERSITY OF MICHIGAN
BOX 8618 • ANN ARBOR • MICHIGAN 48107

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Data from infrared imagery on various terrain and water (ice, in this instance) backgrounds have been collected by the Environmental Research Institute of Michigan and have been analyzed to present their statistical features. The work is being funded by the Optical Signatures Program to Support Navy Requirements. This report describes some of the characteristics in the form of histograms, ellipse "pictures", and power spectra for

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micrometers.

Abstract (Cont.)

the following infrared spectral bands: 3.5-3.9, 4.5-5.5, and 9.0-11.4 μm. Areas were chosen to show variability of results in a winter scene with respect to different times of the day and night.

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SUMMARY

The work described herein was funded by the Optical Signatures Program to Support Navy Requirements. Data from infrared (IR) imagery on various terrain and water (ice) backgrounds from a winter scene in Northern Michigan have been collected by the Environmental Research Institute of Michigan and have been analyzed to present their statistical features. The data were collected by the ERIM M-7 scanner, a multispectral scanner which operates in several wavelength bands in the visible and infrared portions of the E-M spectrum. The imagery was collected with the scanner looking both downward and in a direction elevated 55 degrees with respect to the nadir.

The various areas analyzed in this report are depicted in greymaps shown in the body of the report. The characteristics of the IR imagery and of the flight conditions are described in detail in Table 1 (pg. 12). The scanner instantaneous field of view (IFOV) in the downward looking case is about 4.4 ft x 4.4 ft, and in the slant case is about 4.4 ft x 7.6 ft. The area covered in each scene was 1650 ft x 2800 ft, and the area analyzed was 1650 ft x 1750 ft. The statistics calculated have been presented in figures and tables in the body of the report as histograms, spectral correlations, ellipses, and power spectra.

Histograms of probability-of-occurrence of the signal values are presented in terms of apparent temperature in the 3.5-3.9 μm, 4.5-5.5 μm, and 9.0-11.4 μm wavelength bands.

Spectral correlations are presented to show relationships between the signals of the various channels. These are given along with means and standard deviations for the different bands and the various scenes.

Ellipse representations of scene features are presented, depicting area sizes which occur above (or below) given threshold levels. The basis for the formation of ellipses is described in an earlier report [1]. Each ellipse represents certain features in the scene in area and general orientation, except that the area is specialized to a simple geometric form.

Power spectra of each of the scenes are presented for comparing results of different spectral regions.

The essential feature in this work was the nature of the scenery. It was desired, for a significant addition to the collection of statistics on IR imagery, to analyze the imagery from a winter scene; one in which water is replaced by ice and the whole landscape virtually covered with snow. The place chosen was an area in the Northern part of Michigan's lower peninsula during April 1979. Flights were made at four times in the 24-hour cycle, i.e., pre-dawn, noon, sunset, and midnight.

In summary, whereas some of the scenery from earlier studies [2,3] were distinguished by large variations, the winter scene is shown to be relatively uniform, with changes in temperature sometimes undetectable above system noise. None of the results come as a great surprise considering the uniformity of ground cover caused by the layer of snow and ice; and in this particular case, considering the extremely uniform atmospheric conditions.

More specific conclusions relating directly to the particular events in the scene are presented in the text.

---

[1] R. Spellicy, J. Beard, and J. R. Maxwell, Statistical Analysis of Terrain Background Measurements Data, Report 120500-12-F, ERIM, March 1977.

[2] A. J. LaRocca, J. R. Maxwell, Statistical Analysis of Terrain Data, Report No. 132300-2-F, ERIM, February 1979.

[3] A. J. LaRocca, Statistical Analysis of Terrain and Water Backgrounds in the Vicinity of Port Hueneme, California, Report No. 132300-3-T, ERIM, April 1979.

Important Note

The histograms in Section 2, as mentioned above, are presented as probability-of-occurrence vs. temperature (or other independent variable). However, the temperature interval corresponding to each value is usually included on the abscissa, but was inadvertently omitted on those in this report. Hence, the intervals corresponding to the different scenes are reproduced below. The corrected abscissa will then read:

Probability (Fraction of Total)/ΔT

where ΔT is in °K.

		Δλ	ΔT
Pre-dawn	90° Depression:	4.5 - 4.4 μm	0.02 K
		9.0 - 11.4 μm	0.02 K
	35° Depression:	4.5 - 5.5 μm	0.02 K
		9.0 - 11.4 μm	0.02 K
Noon	90° Depression:	3.5 - 3.9 μm	0.42 K
		4.5 - 5.5 μm	0.04 K
		9.0 - 11.4 μm	0.07 K
	35° Depression:	3.5 - 3.9 μm	0.42 K
		4.5 - 5.5 μm	0.05 K
		9.0 - 11.4 μm	0.07 K
Sunset	90° Depression:	4.5 - 5.5 μm	0.02 K
		9.0 - 11.4 μm	0.02 K
	35° Depression:	4.5 - 5.5 μm	0.02 K
		9.0 - 11.4 μm	0.02 K
Midnight	90° Depression:	4.5 - 5.5 μm	0.02 K
		9.0 - 11.4 μm	0.02 K
	35° Depression:	4.5 - 5.5 μm	0.02 K
		9.0 - 11.4 μm	0.02 K

ACKNOWLEDGEMENTS

The author wishes to acknowledge the invaluable assistance of Ms. Abby Liskow in performing the extensive computer operations necessary for the successful completion of the analyses; and of Mr. David Witte in helping prepare the report for publication.

Under the supervision of Mr. Stephen Stewart, data were collected on the flight by instrumentation specialists Mr. Jimmie Ladd and Mr. William Juodawlkis.

ERIM

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1
INTRODUCTION

As part of a program to derive statistical information on the electromagnetic (EM), visible and IR characteristics of various terrain backgrounds, we have analyzed imagery of selected areas in a flight on 3-4 April 1979 between Indian River and Pellston in the Northern part of Michigan's lower peninsula. Aerial photos of four selected areas are shown in Figures 1, 2, 3, and 4. They depict, respectively, sections of the city of Indian River, a land-to-water (actually snow-covered ice) transition area, conifers, and a section of farmland.

The purpose of this effort was to collect and analyze imagery from a winter scene. The imagery in the 3.5-3.9, 4.5-5.5, and 9.0-11.4 μm spectral bands are shown in Figures 5, 6, 7, and 8 corresponding respectively to four diurnal periods; i.e., pre-dawn, noon, sunset, and midnight. These bands are the same as those used in earlier work except that the 2.0-2.6 μm band was omitted, as data from this band were similar to the 3.5-3.9 μm band. The 3.5-3.9 μm band data were only useful for the noon condition, being noisy for all others.

Sunrise occurred at 0614, and sunset occurred at 1910 on the days of the flight. The imagery from which the analyses were made were collected with the ERIM M-7 scanner, described in detail in Reference 1. Briefly, the system is a multispectral scanner operating in several bands in the visible and IR portions of the EM spectrum. The background

[1] R. Spellicy, J. Beard, and J. R. Maxwell, Statistical Analysis of Terrain Background Measurements Data, Report 120500-12-F, ERIM, March 1977.

data, along with signals from several calibration sources, are digitally recorded on a high-density digital tape and converted to a computer-compatible tape from which the analyses are made.

Pertinent information on the scenes analyzed are given in Table 1. The results of the analyses for this effort take the following forms: histograms, spectral correlations, ellipses simulating terrain features, and power spectra.

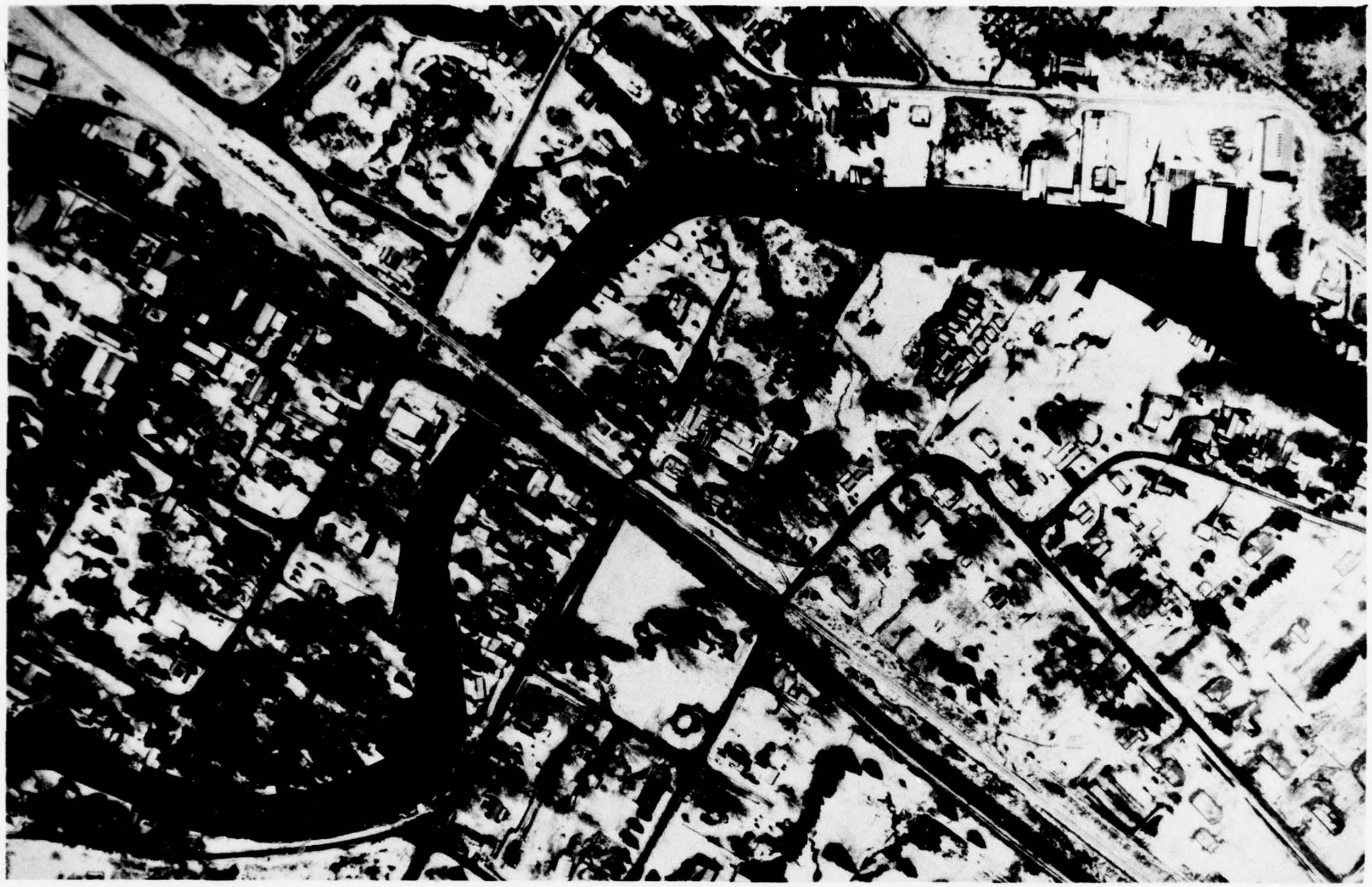


FIGURE 1. AERIAL PHOTOGRAPH - CITY

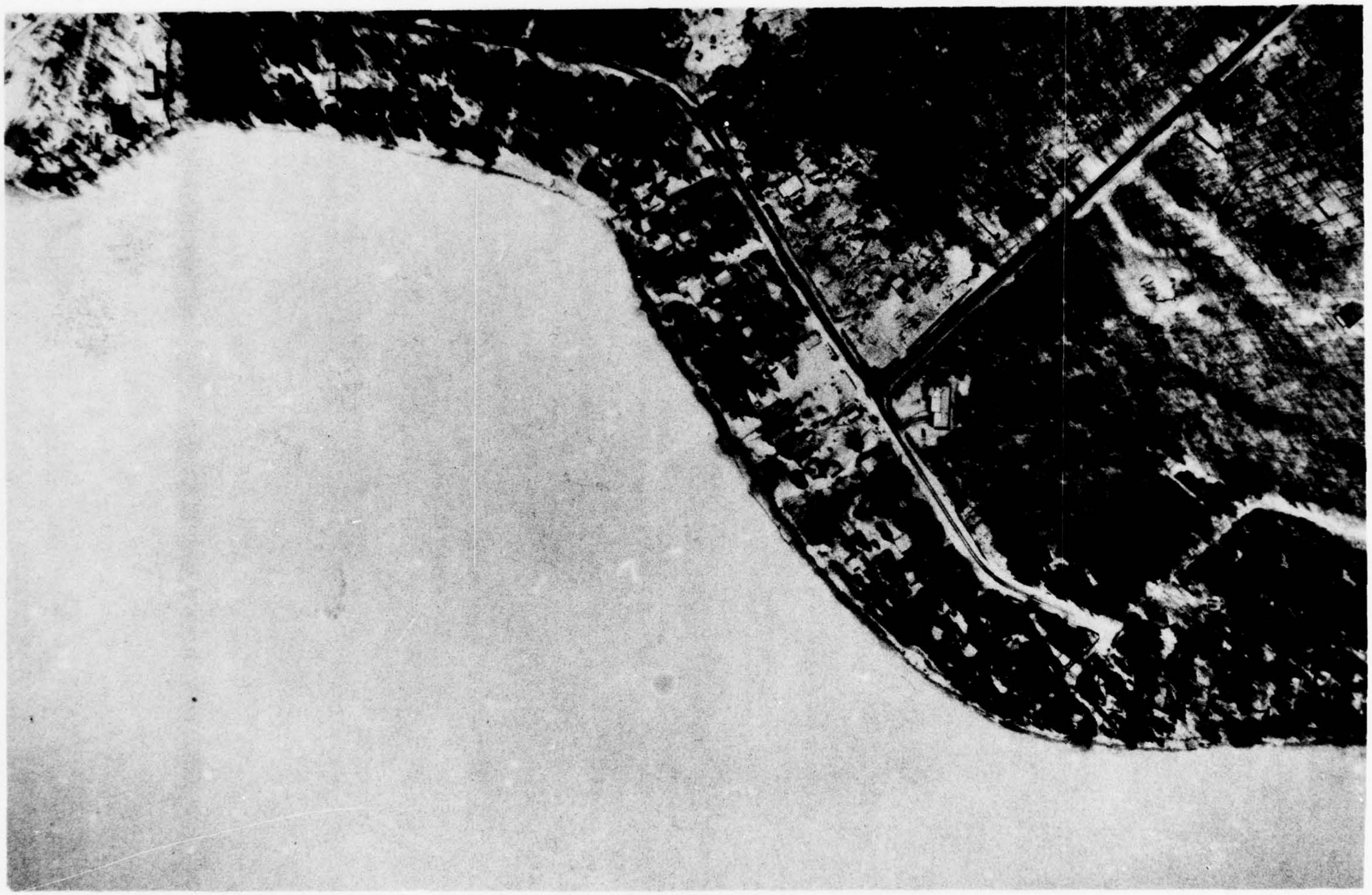


FIGURE 2. AERIAL PHOTOGRAPH - LAND & WATER

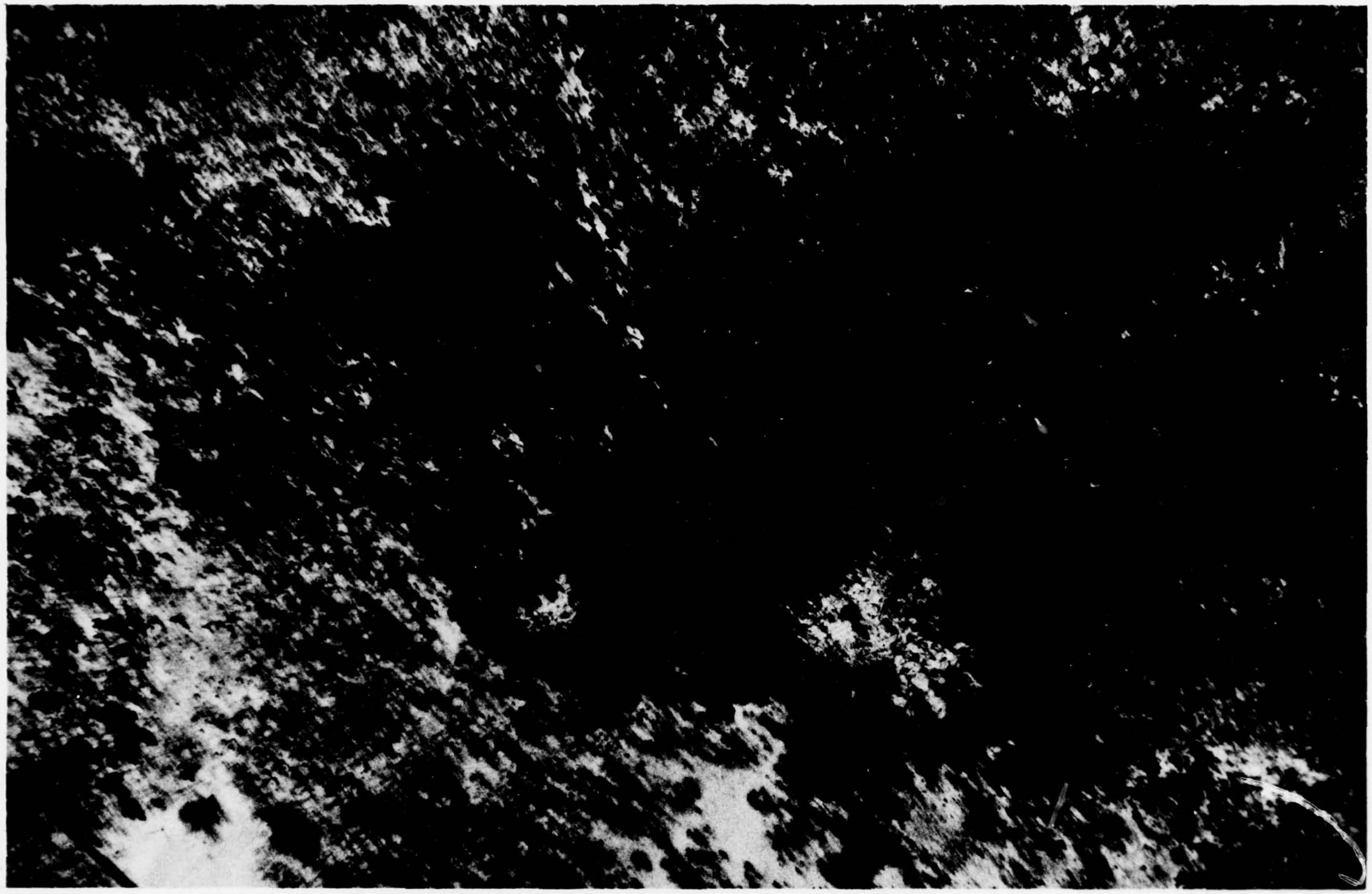


FIGURE 3. AERIAL PHOTOGRAPH - CONIFERS

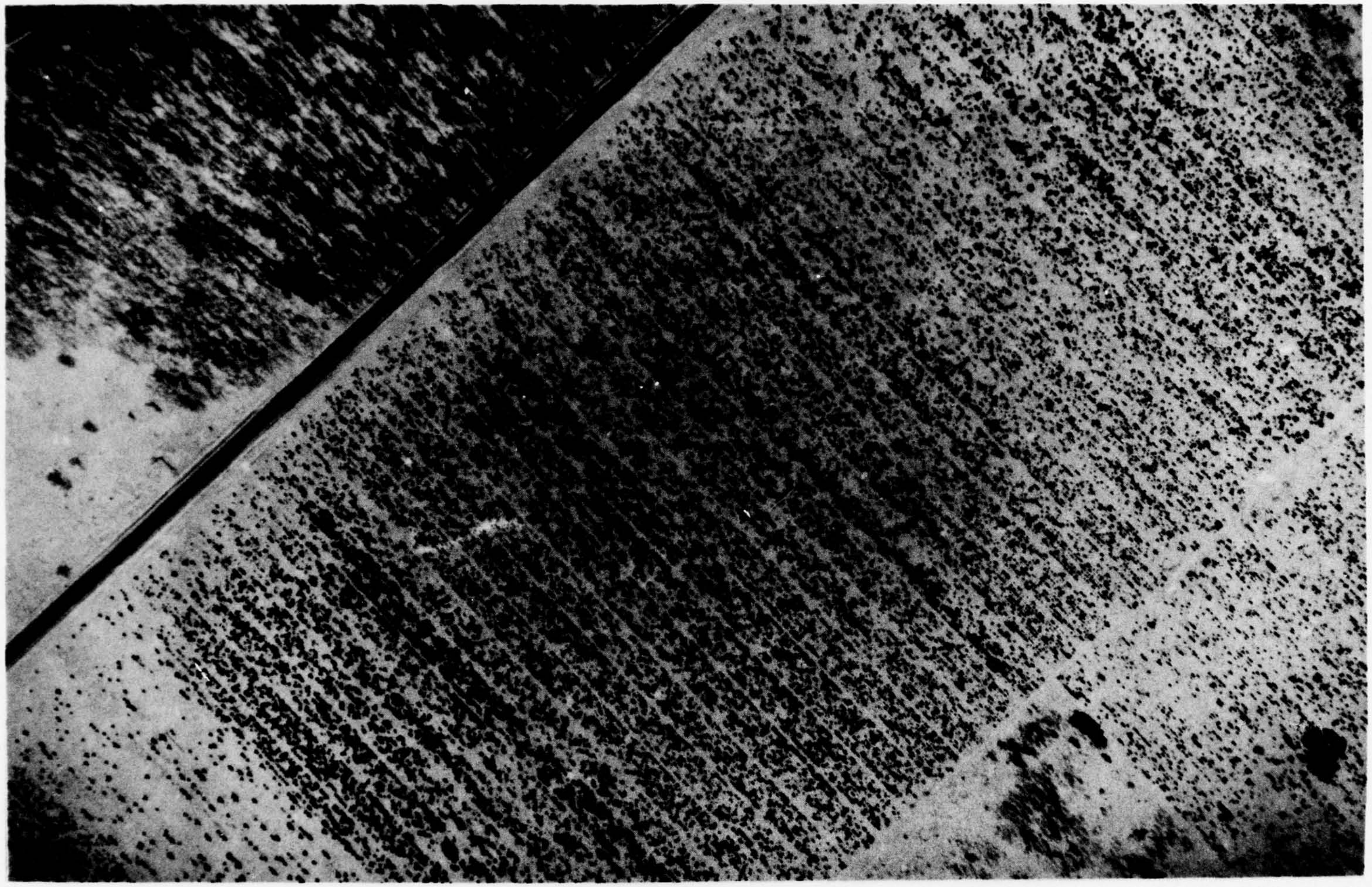
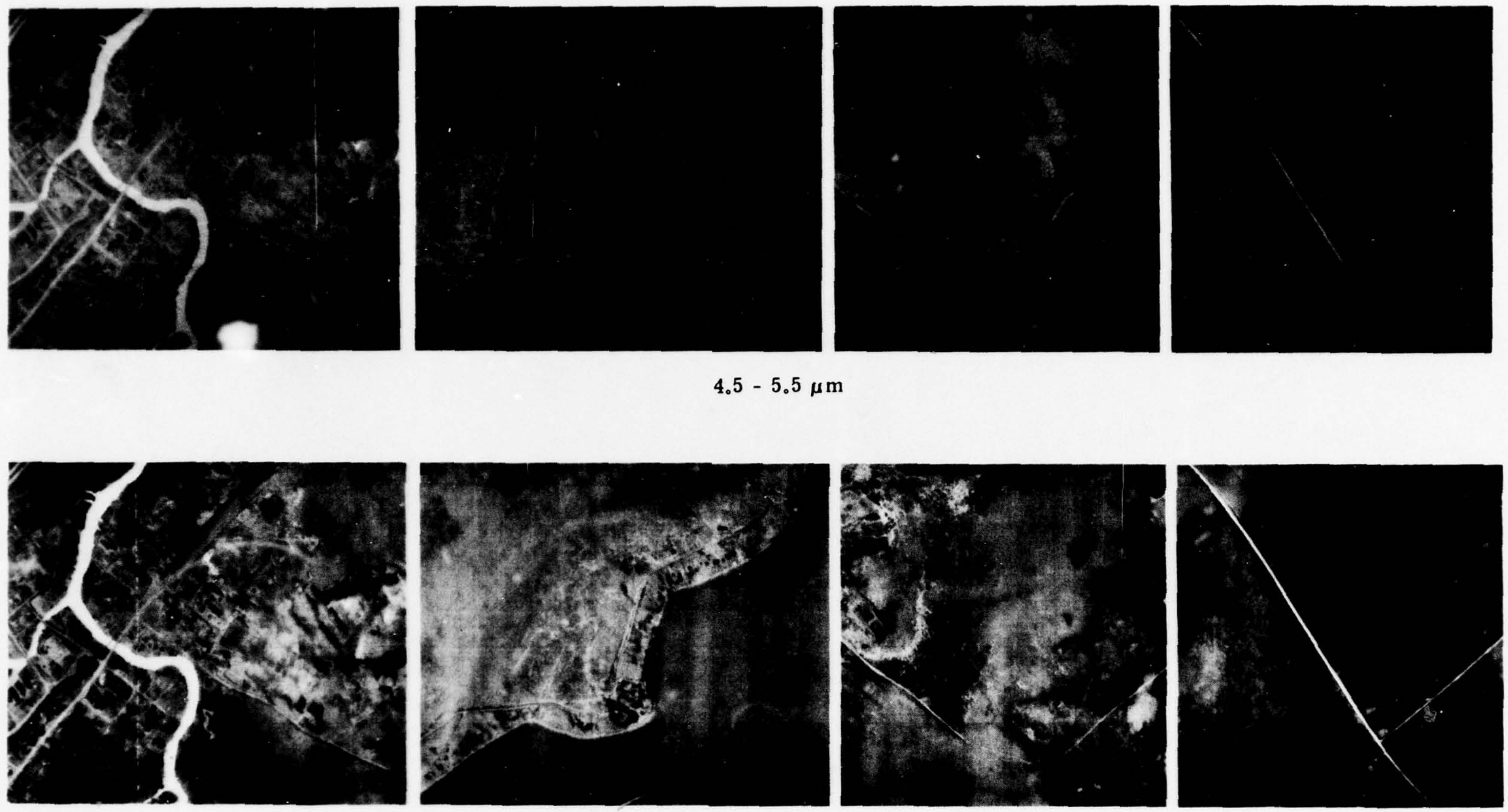


FIGURE 4. AERIAL PHOTOGRAPH - FARMLAND

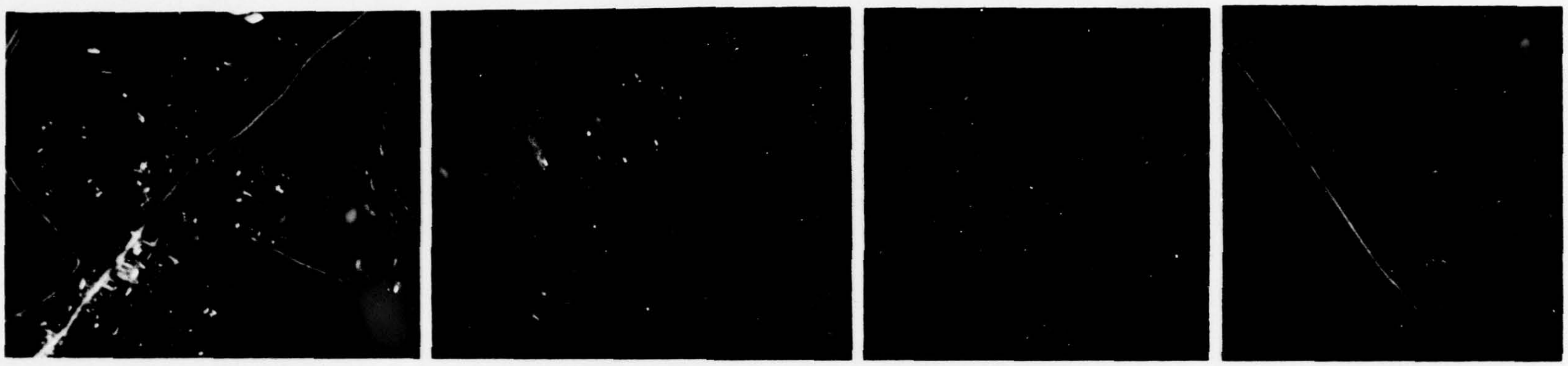


4.5 - 5.5 μm

City | Land & Water | Conifers | Farmland

9.0 - 11.4 μm

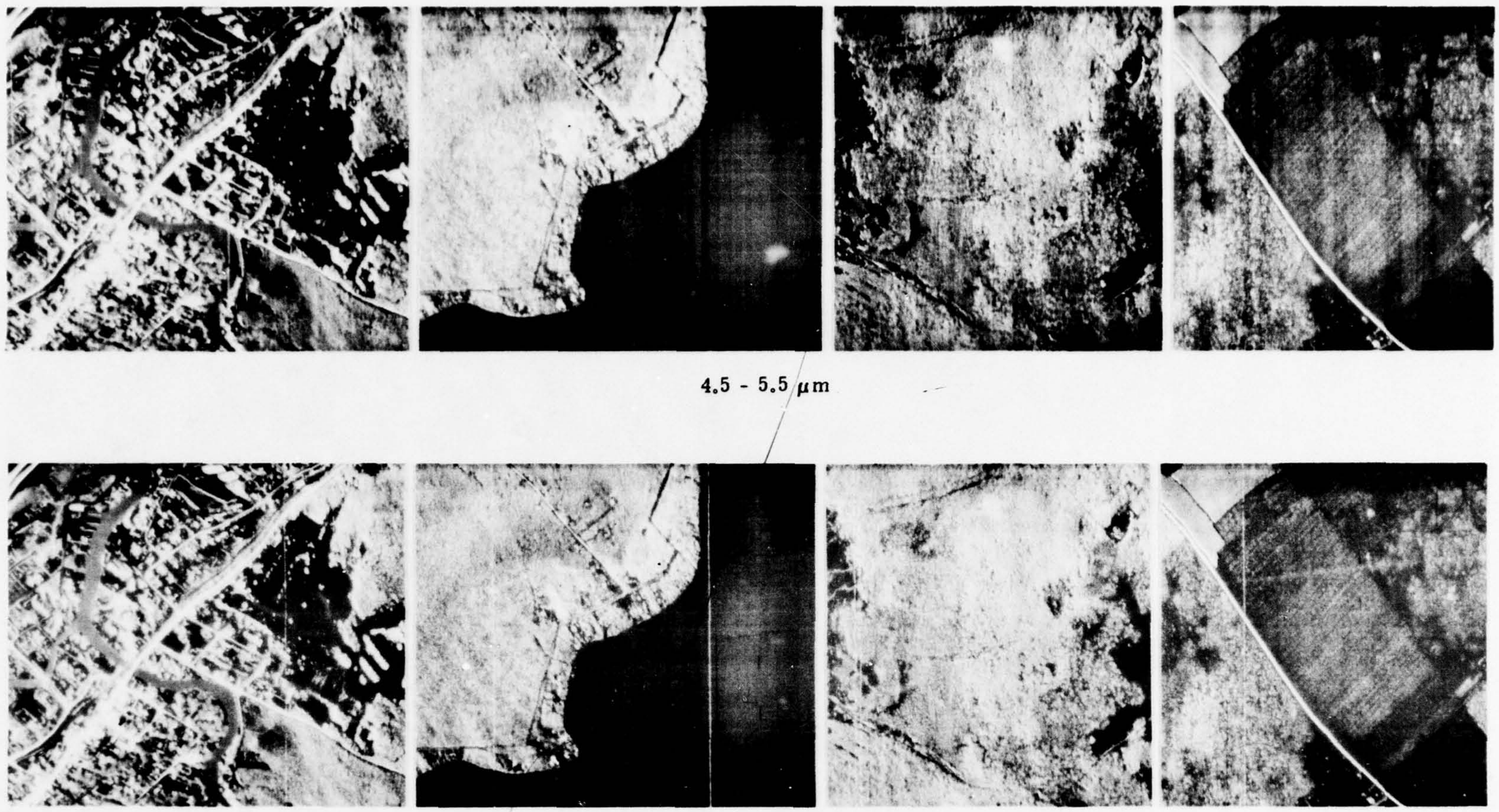
FIGURE 5. MICHIGAN WINTER SCENE IMAGERY - PRE-DAWN (90° Depression)



City   Land & Water   Conifers   Farmland

3.5 - 3.9 μm

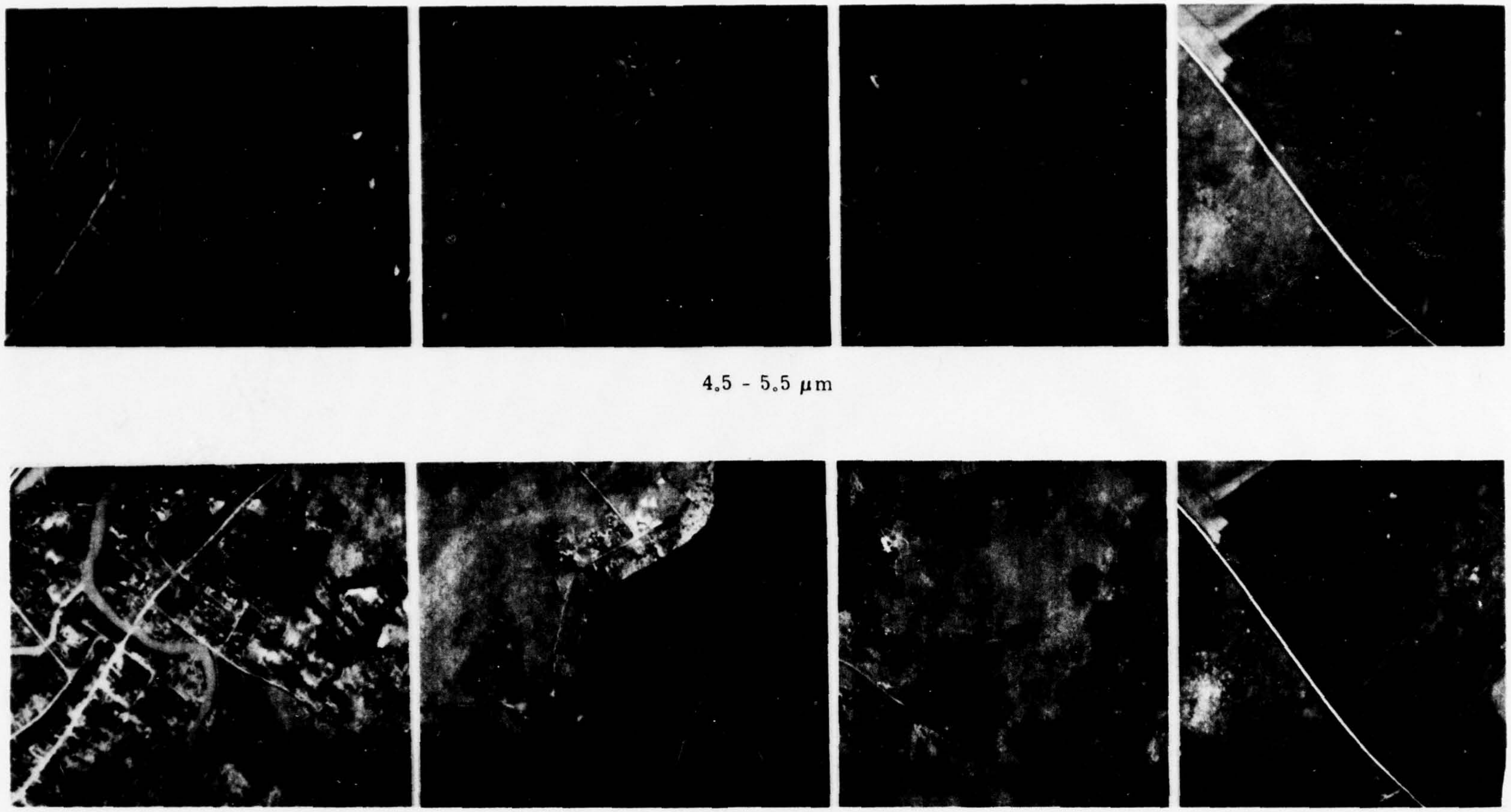
FIGURE 6a. MICHIGAN WINTER SCENE IMAGERY - NOON (90° Depression)



City Land & Water Conifers Farmland

9.0 - 11.4 μm

FIGURE 6b. MICHIGAN WINTER SCENE IMAGERY - NOON (90^{O} Depression)

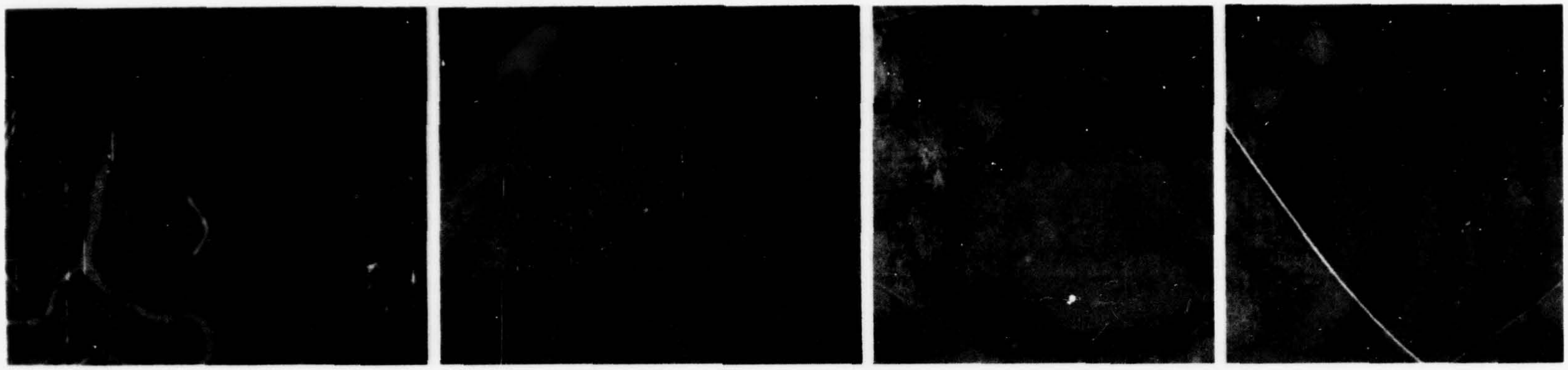


4.5 - 5.5 μm

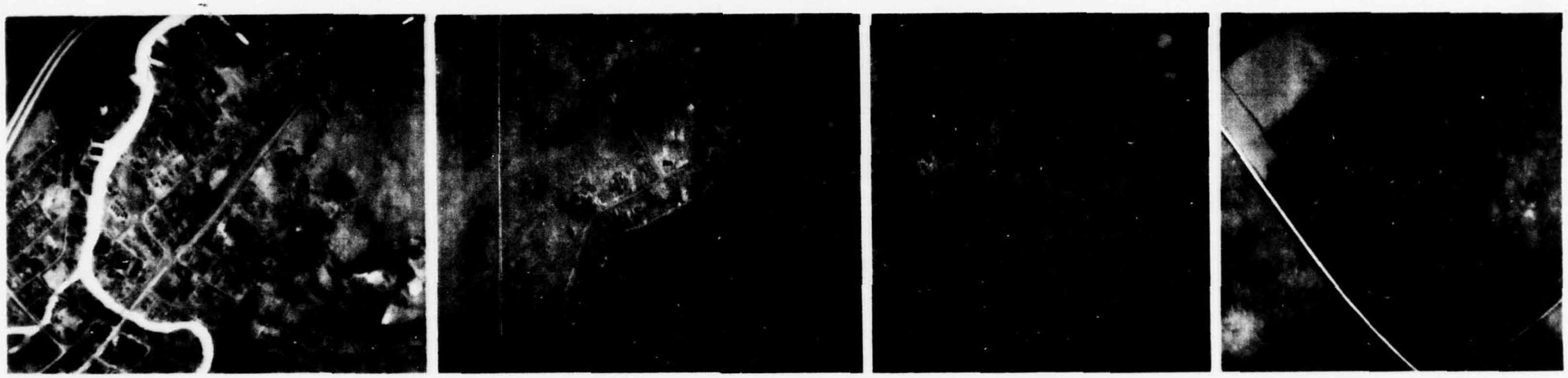
City | Land & Water | Conifers | Farmland

9.0 - 11.4 μm

FIGURE 7. MICHIGAN WINTER SCENE IMAGERY - SUNSET (90^{o} Depression)



4.5 - 5.5 µm



City | Land & Water | Conifers | Farmland

9.0 - 11.4 µm

FIGURE 8. MICHIGAN WINTER SCENE IMAGERY - MIDNIGHT (90° Depression)

TABLE 1. PERTINENT INFORMATION ABOUT DIURNAL MICHIGAN WINTER SCENE DATA

	Pre-Dawn	Noon	Sunset	Midnight
Wavelength Bands:	4.5-5.5 μm, 9.0-11.4 μm	3.5-3.9 μm, 4.5-5.5 μm, 9.0-11.4 μm	4.5-5.5 μm, 9.0-11.4 μm	4.5-5.5 μm, 9.0-11.4 μm
IFOV:	2.5 mrad	2.5 mrad	2.5 mrad	2.5 mrad
Altitude:	90° Depression: 1750 ft; 35° Depression: 1000 ft	90° Depression: 1750 ft; 35° Depression: 1000 ft	90° Depression: 1750 ft; 35° Depression: 1000 ft	90° Depression: 1750 ft; 35° Depression: 1000 ft
Time:	0535-0605 hrs	1230-1305 hrs	1900-1930 hrs	0030-0120 hrs
Flight Direction:	NNW	NNW	NNW	NNW
Ground Speed:	202 ft-sec^{-1}	202 ft-sec^{-1}	202 ft-sec^{-1}	202 ft-sec^{-1}
Area Covered (Approx.):	1650 ft long 2800 ft wide (1750 ft wide)*	1650 ft long 2800 ft wide (1750 ft wide)*	1650 ft long 2800 ft wide (1750 ft wide)*	1650 ft long 2800 ft wide (1750 ft wide)*
Type of Area Analyzed:	4 types: city; land-to-water transition; conifers; farmland	4 types: city; land-to-water transition; conifers; farmland	4 types: city; land-to-water transition; conifers; farmland	4 types: city; land-to-water transition; conifers; farmland
Meteorology:	Snow covered ground; air temp=-2°C; cloud cover=95%	Snow covered ground; air temp=5°C; cloud cover: clear	Snow covered ground, air temp=4°C, cloud cover=15%	Snow covered ground; air temp=-2°C; cloud cover=60% - 95%

*In this table, the asterisk applies to the width of the scene for which the statistics are calculated. This is about 63% of the imagery width, centered in the image.

2
HISTOGRAMS

After the imagery are calibrated and computer-processed to achieve line-by-line contiguity, the data are stored on magnetic tape in such a way that individual pixel data can be analyzed. For a given scene, the pixel values are stored in data bins and counted for the purpose of creating histograms, and the mean values and standard deviations are computed. The data are collected as digital numbers, converted by calibration to radiances, and finally translated via the Planck function for the given thermal band to apparent temperature values with emissivity of unity. When the 2.0-2.6 μm band has been used, since the sun-dominated imagery cannot be meaningfully converted to temperature, the radiance values are retained. The histograms, therefore, are plotted in terms of either temperature or spectral radiance, whichever case applies. Conversions to temperature are made, for this effort, in the 3.5-3.9, 4.5-5.5, and 9.0-11.4 μm bands.

To help locate features in the imagery with respect to the actual line and pixel numbers, greymaps have been created from data in the 9.0-11.4 μm band for each of the scenes described in Table 1. The greymaps are presented in Figures 9, 10, 11 and 12 for the different times of the day. The greymaps include the entire 1650 x 2800 feet of each scene. The histograms and remaining statistics are for the center 1750 feet by 1650 feet. The greymaps, incidentally, are integrated over 36 pixels, six in each direction; and the scale distortion is caused by the fact that the printer does not separate the characters the same distance in the X and Y directions.

In addition to the temperature scale on the temperature-related histograms, there appears an equivalent radiance (in the band) scale, and a scale of digital numbers linear with respect to temperature. The digital values range from 0 to 255, presumably covering the range of temperatures expected in the scenes. Occasionally, the scale, determined by the

separation of the temperature values of the calibration sources, is not sufficient to cover the actual temperature range, and we encounter some saturation on both ends of the scale. It will also be noted that peculiarities in the digitizing or other processing of the data cause artificial features in the histograms which do not necessarily correlate with the imagery. These occurrences, however, are few. Histograms are reproduced in Figures 13a through 28d.

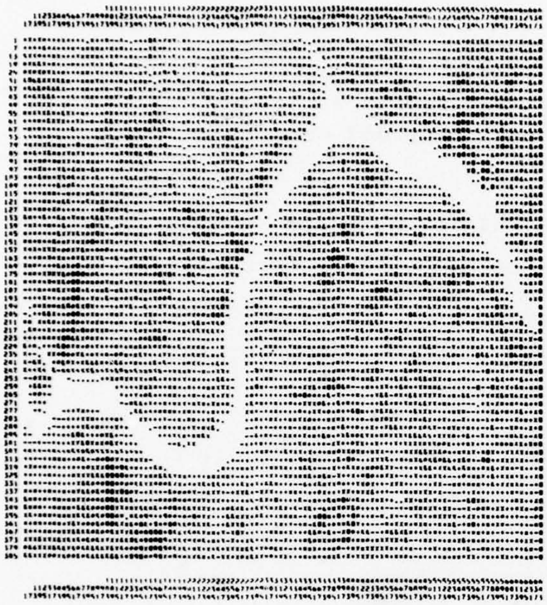
A cursory observation of the histograms from this winter scenery indicates a decided contrast with many of the results from other scenes measured at different times of the year. Aside from the expected lower mean temperatures, we see considerably lower standard deviations, approaching at times the noise of the sensor itself. We note of course, that the whole region is mainly snow-covered, even the lake, which maintains a crust of ice beneath the snow. Also, conditions during these flights were relatively stable, evidenced by the small difference between day and night temperatures. At this time of the year, the snow was beginning to recede due to a natural warming trend so that the surface temperature would have tended toward that of melting ice; the midnight and pre-dawn histograms do indeed attest to this fact.

We note from the histograms that the mean temperatures in the 4.5-5.5 μm region are consistently higher (minutely, to be sure) than those in the 9.0-11.4 μm region for the pre-dawn and midnight periods; and they are slightly quieter, as indicated by smaller (also only slightly) standard deviations. This would be consistent with very stable conditions, producing similar ground and air temperatures, with the air temperature perhaps being slightly warmer. The larger absorptance by the atmosphere in the 4.5-5.5 μm region, accompanied by re-emission by the same atmosphere, could feasibly account for the quieter conditions in this spectral region. It is interesting to note, incidentally, from

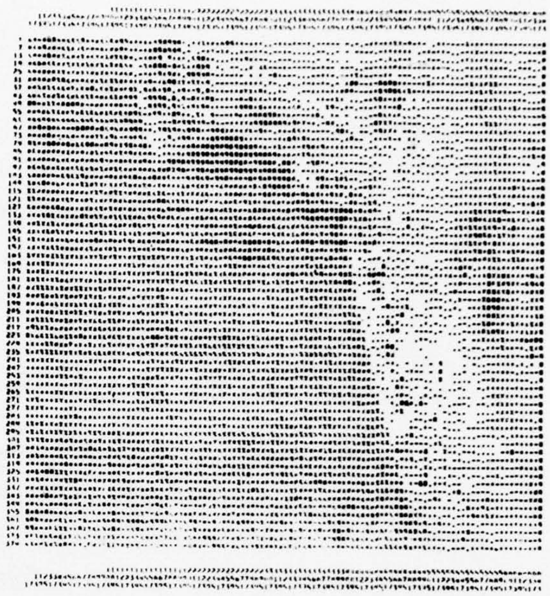
the greymaps of Figure 9 for the city scenes that there are essentially only two levels of data values, one for the river, and one for the rest of the city. We note correspondingly that the histograms are essentially bimodal, with the expected difference in frequency of occurrence of the two peaks. In accordance with the discussion above, we would also expect the two modes to be more pronounced at 9.0-11.4 μm than at 4.5-5.5 μm. And this expectation is fulfilled in the respective histograms for the pre-dawn/city scenery. The greymaps, incidentally, are generated from the 9.0-11.4 μm imagery.

Similar comparison can be made with other imagery taken at other time (for example, unimodal structure of the pre-dawn conifer histograms, consistent with the more-or-less diffuse appearance of the corresponding greymap), but the user is better able to make his own assessment of the various qualities of the data to fit his own needs.

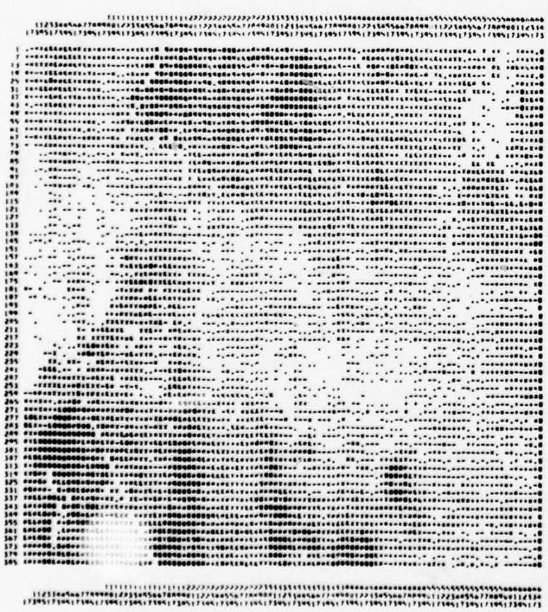
At noon, we experience broader histograms, which is to be expected, especially with clear-sky conditions. We have included for this case a channel from 3.5-3.9 μm which produced little more than noise except at noon. Note that its mean temperature is higher by several degrees than those of the 4.5-5.5 and 9.0-11.4 μm histograms, and its standard deviation is considerably larger. Both of these effects are to be expected because, although the sun's influence is considerably reduced in the 3.5-3.9 μm spectral band, there is sufficient signal on a sun-brightened day to show some effect of sunlight. Note from both the greymap of Figure 10 for the city scene and the histogram shown in Figure 17c that the influence of the river is again evident, but smaller with respect to the surrounding scenery, and reversed; that is, the river shows cooler than the surrounding scenery, in general. Note also that the histogram, because of the sun's influence, is considerably different from the Gaussian curve corresponding to the same mean and standard deviation, and represented by circles on the graph. Unfortunately, because of the difficulty of the scanner operators in setting the temperatures of the calibration plates, we notice more saturation in the data than is usually experienced.



CITY



LAND & WATER



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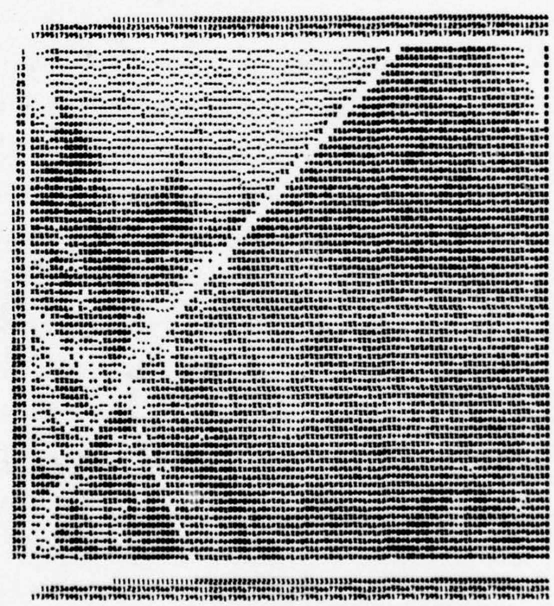
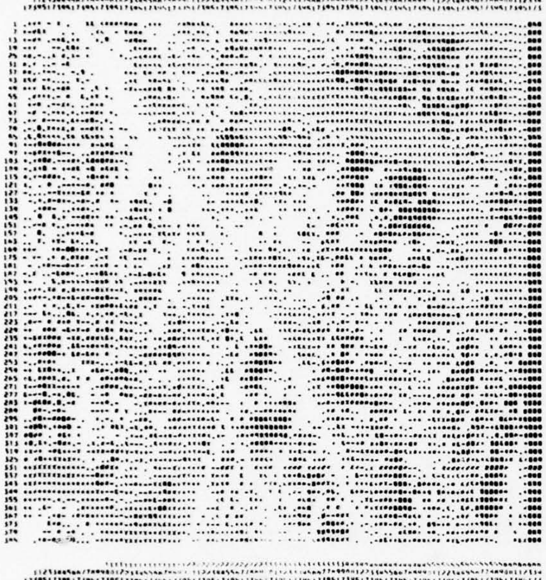
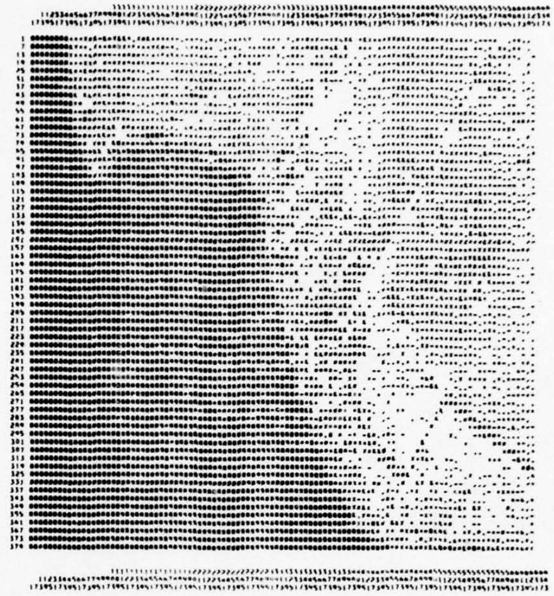


FARMLAND

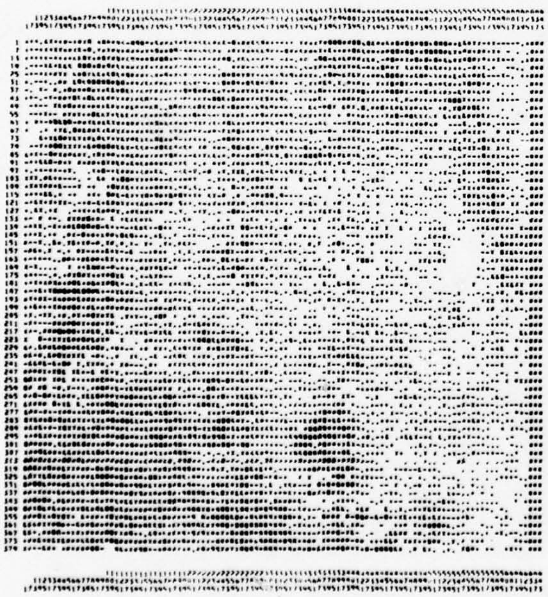
FIGURE 9. MICHIGAN WINTER SCENE GREYMAPS - PRE-DAWN



CITY



LAND & WATER



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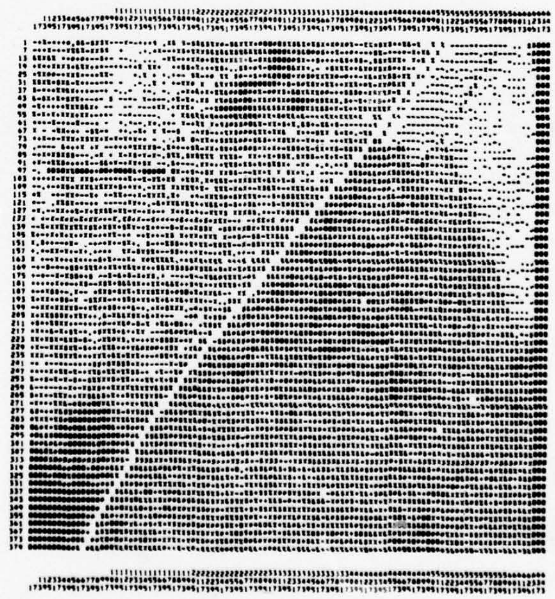


FARMLAND

FIGURE 10. MICHIGAN WINTER SCENE GREYMAPS - NOON

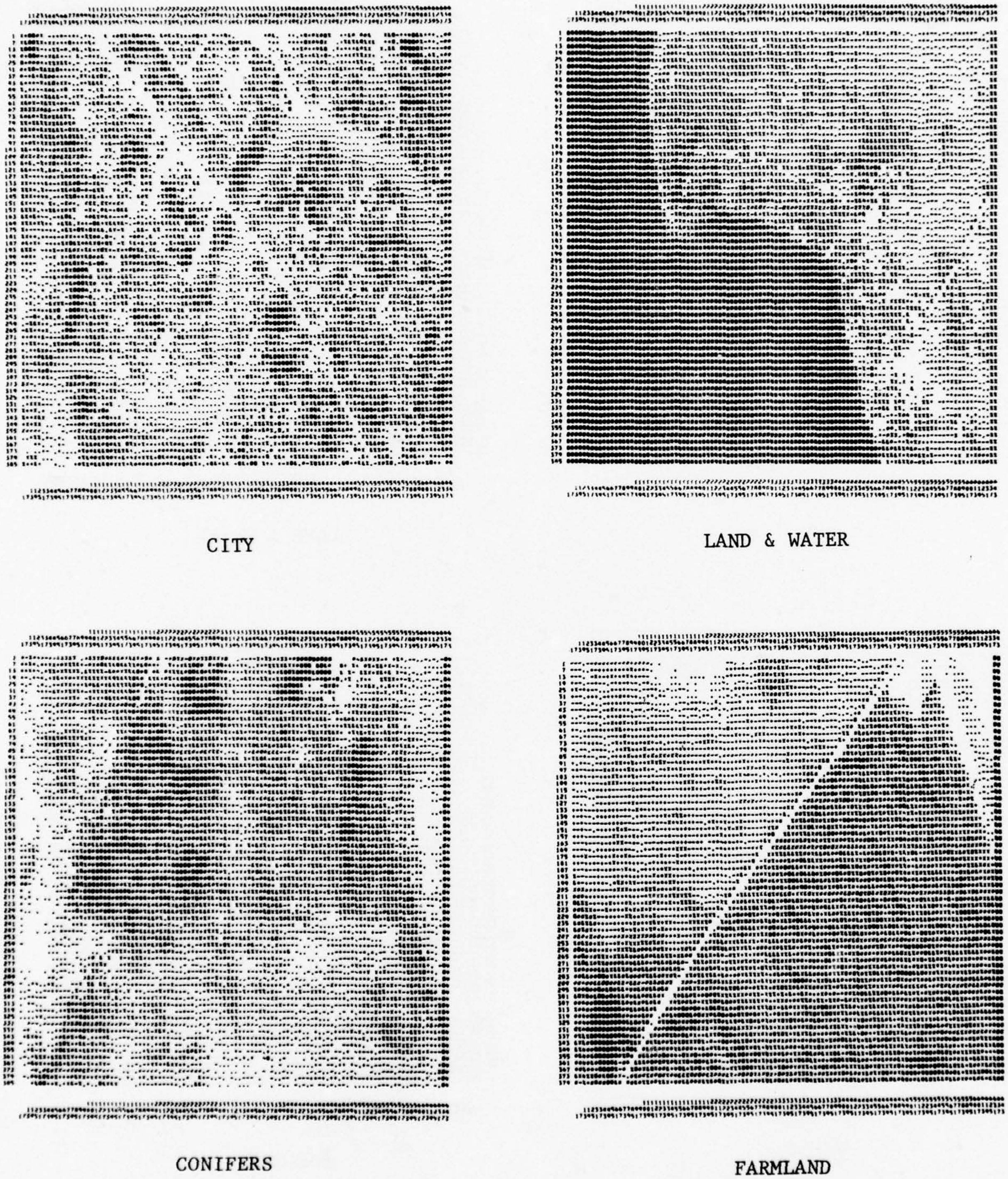


FIGURE 11. MICHIGAN WINTER SCENE GREYMAPS - SUNSET

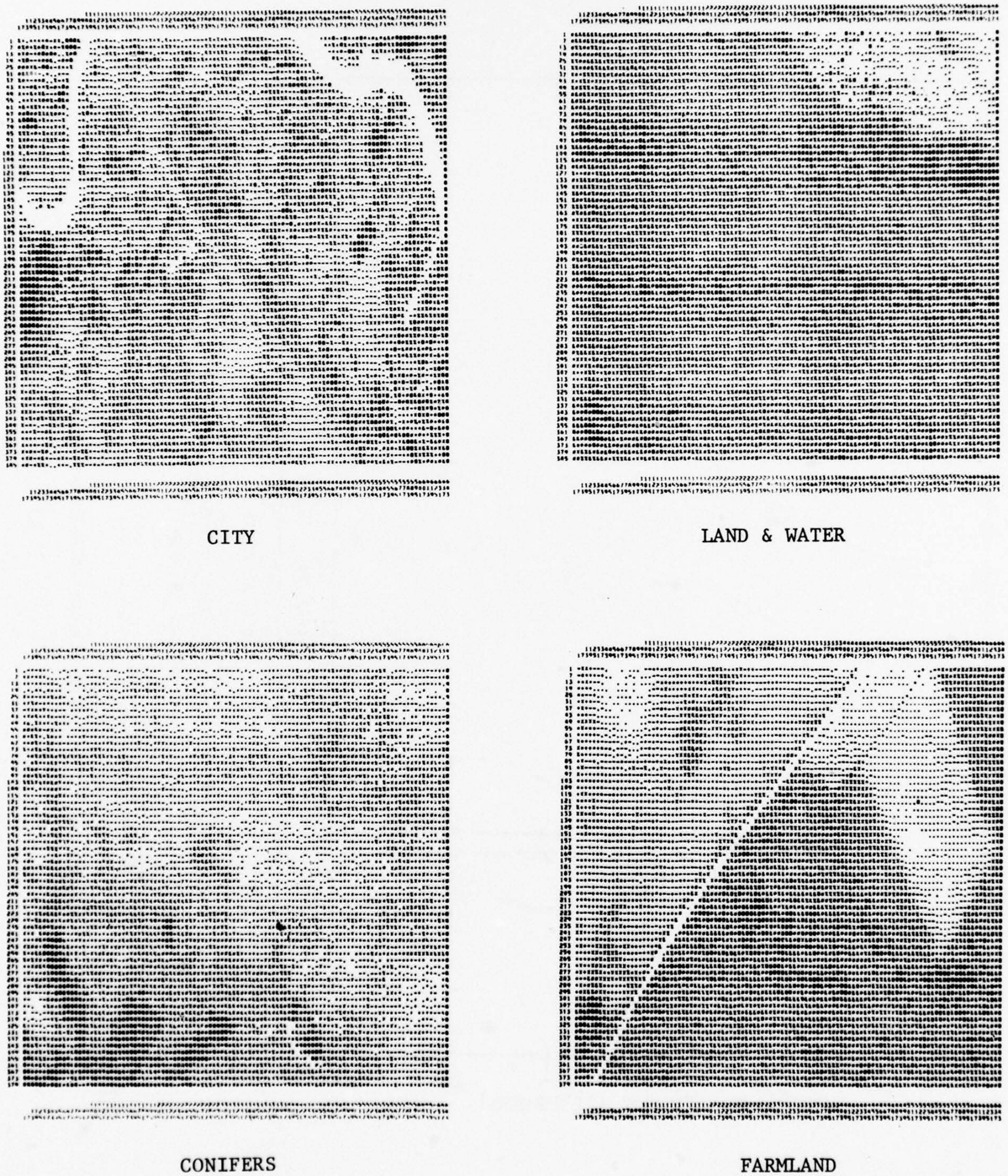
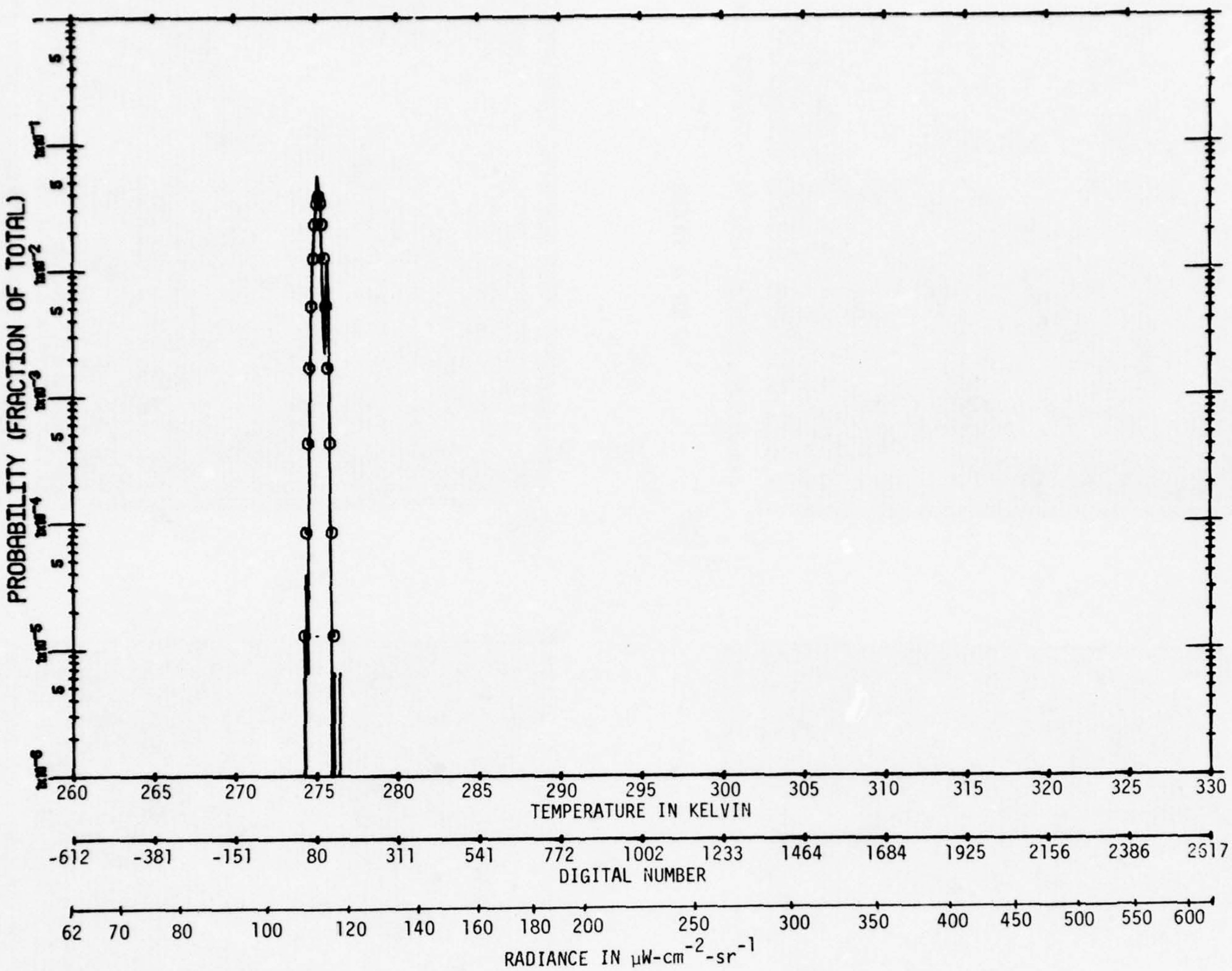
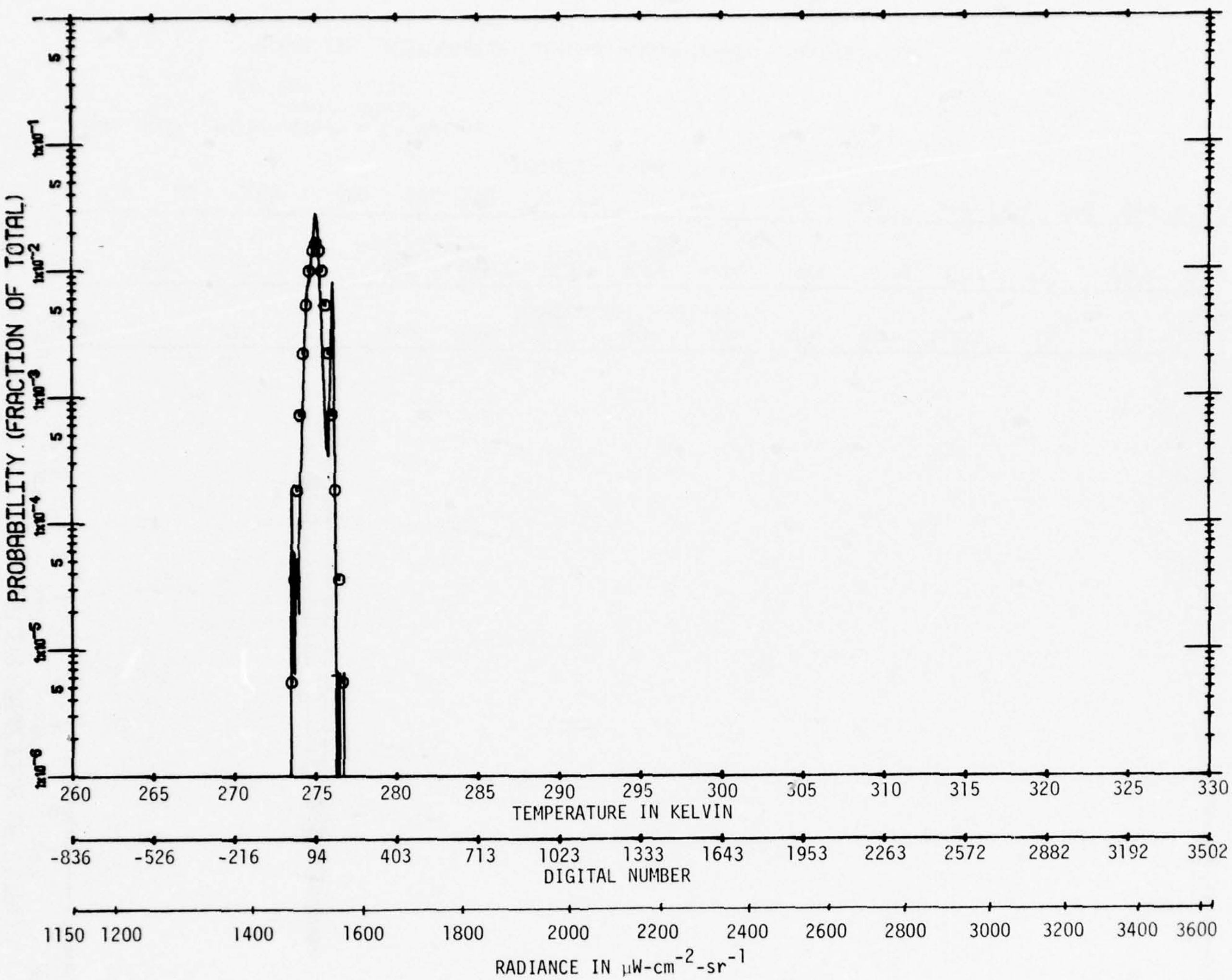


FIGURE 12. MICHIGAN WINTER SCENE GREYMAPS - MIDNIGHT



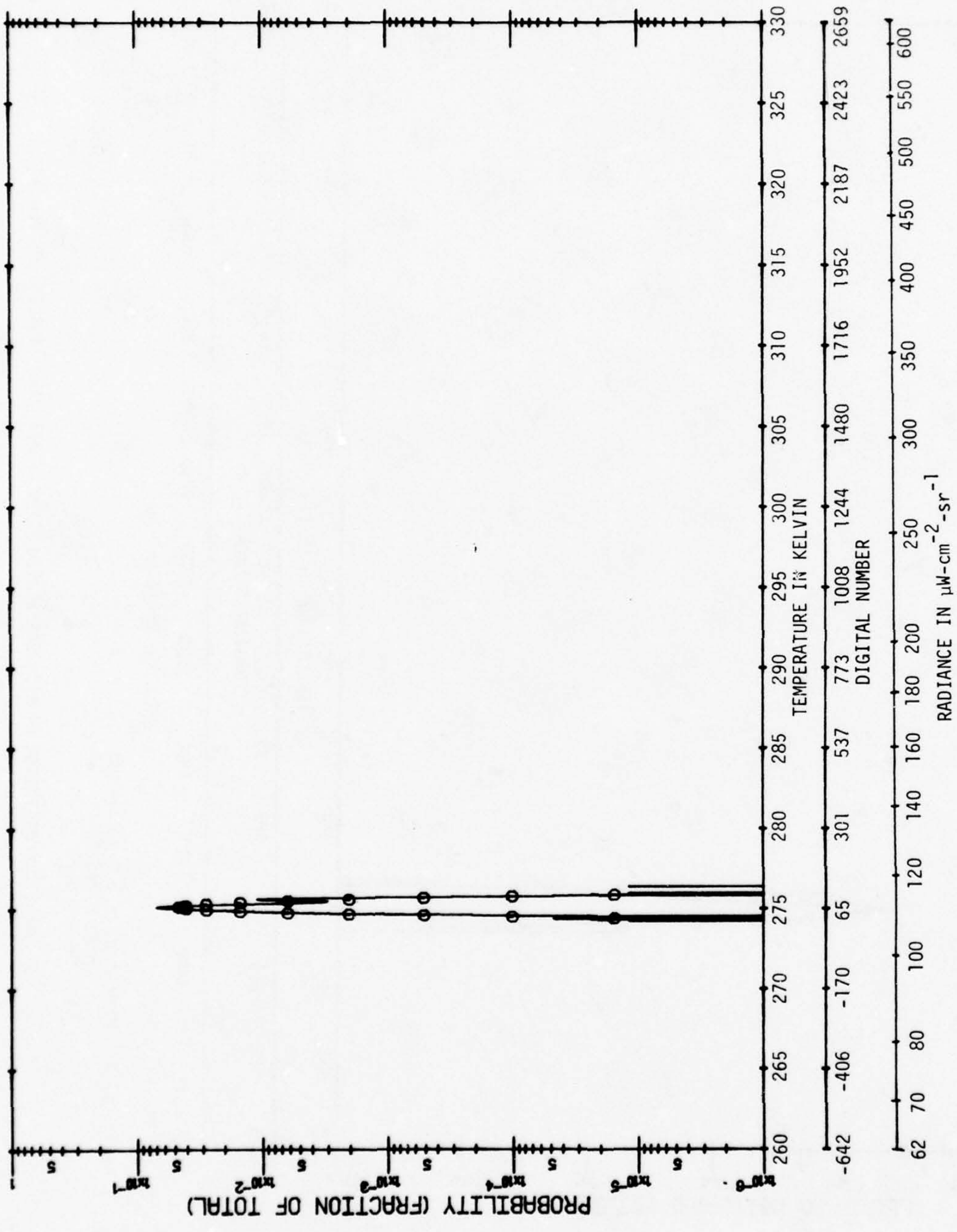
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.15
Std. Dev. = 0.23

FIGURE 13a. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



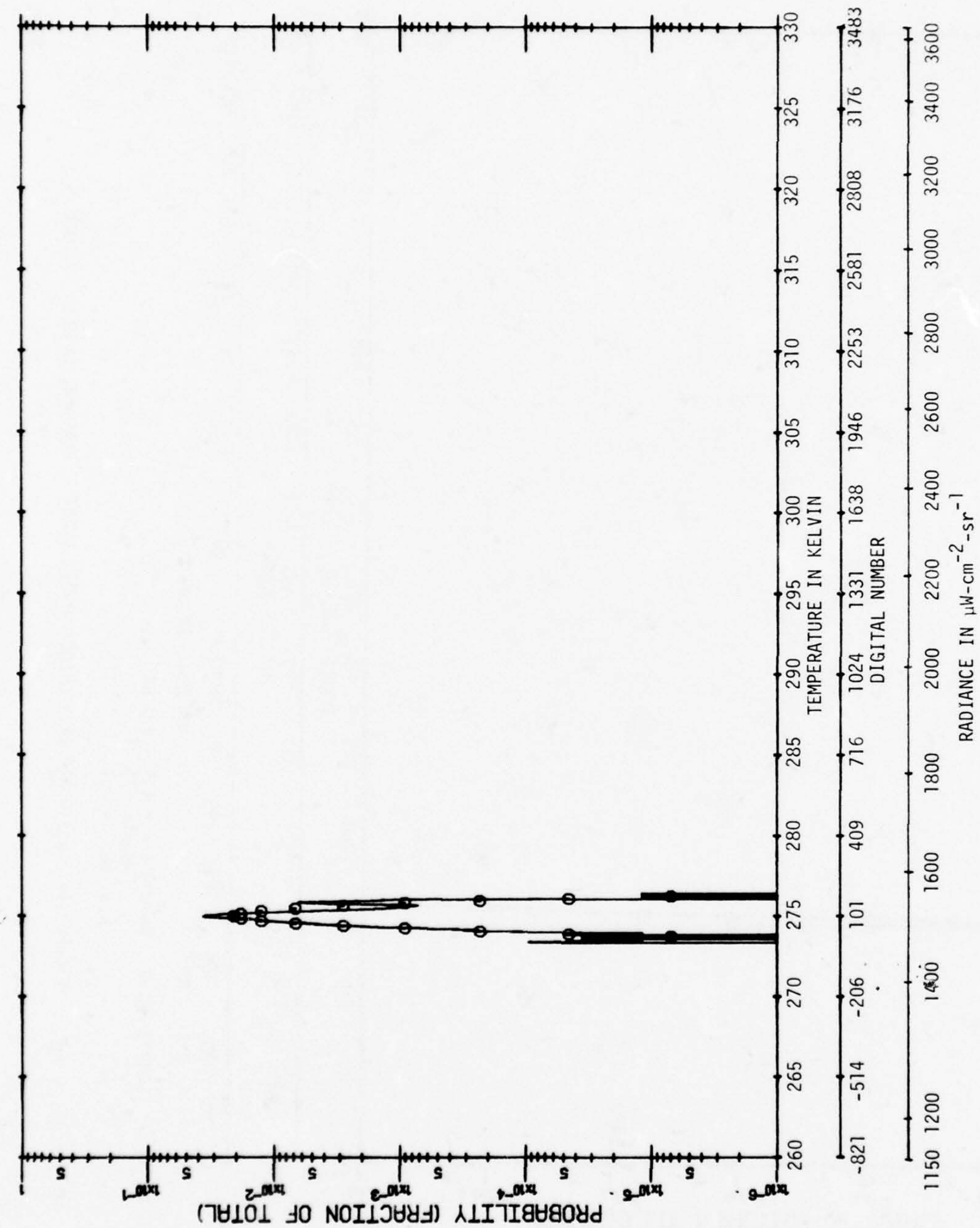
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 275.07
Std. Dev. = 0.39

FIGURE 13b. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



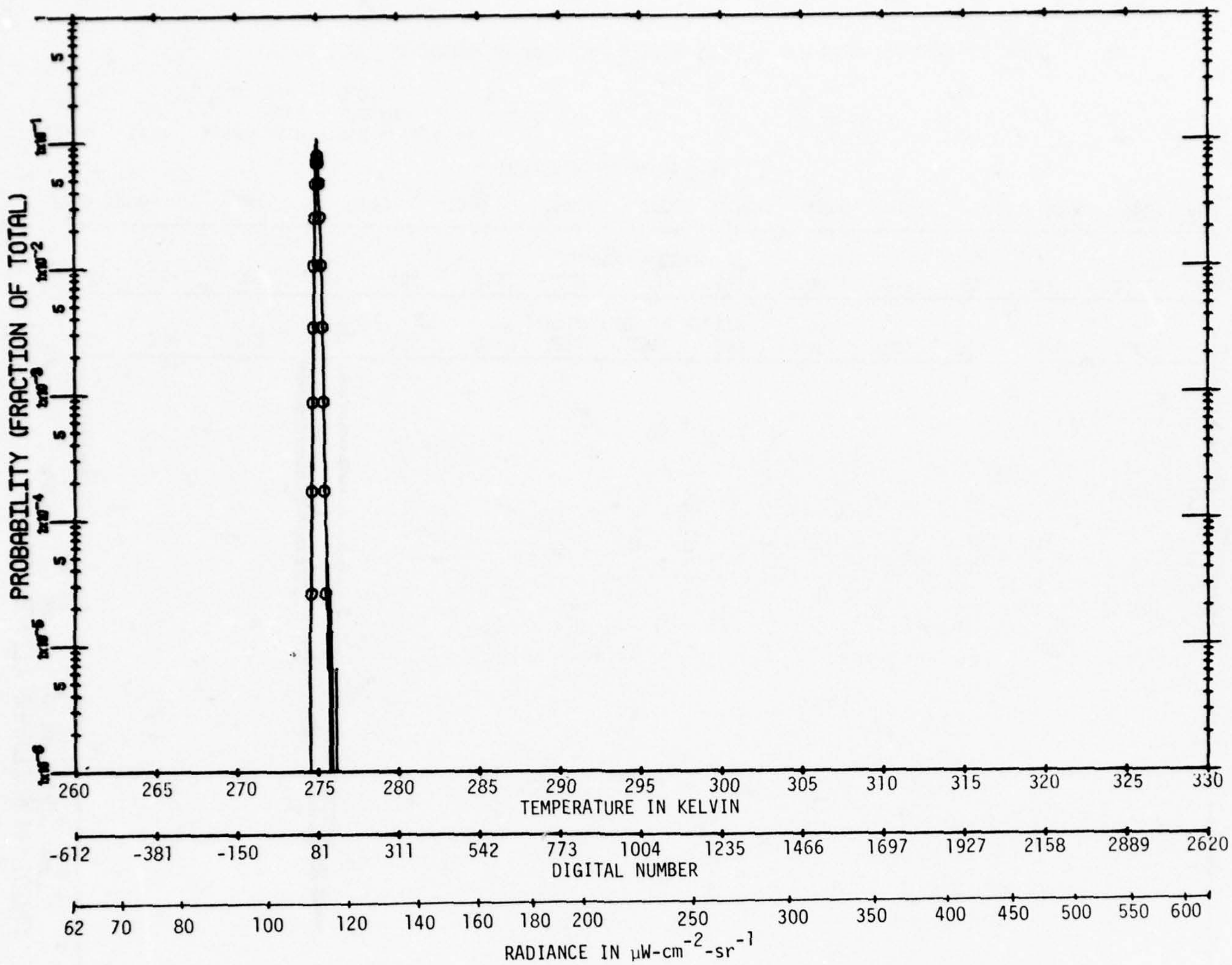
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.13
Std. Dev. = 0.18

FIGURE 13c. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



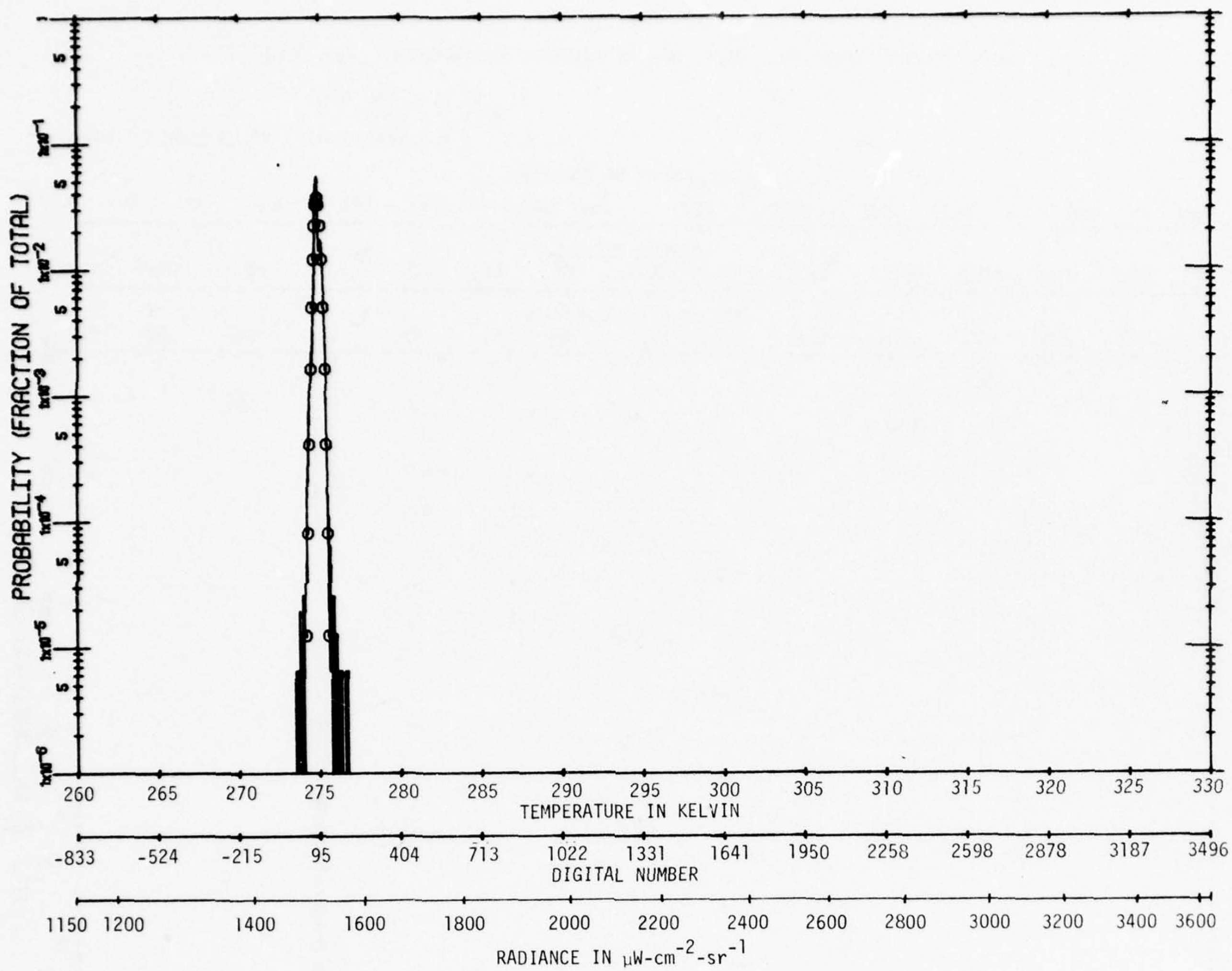
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 274.99
Std. Dev. = 0.31

FIGURE 13d. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



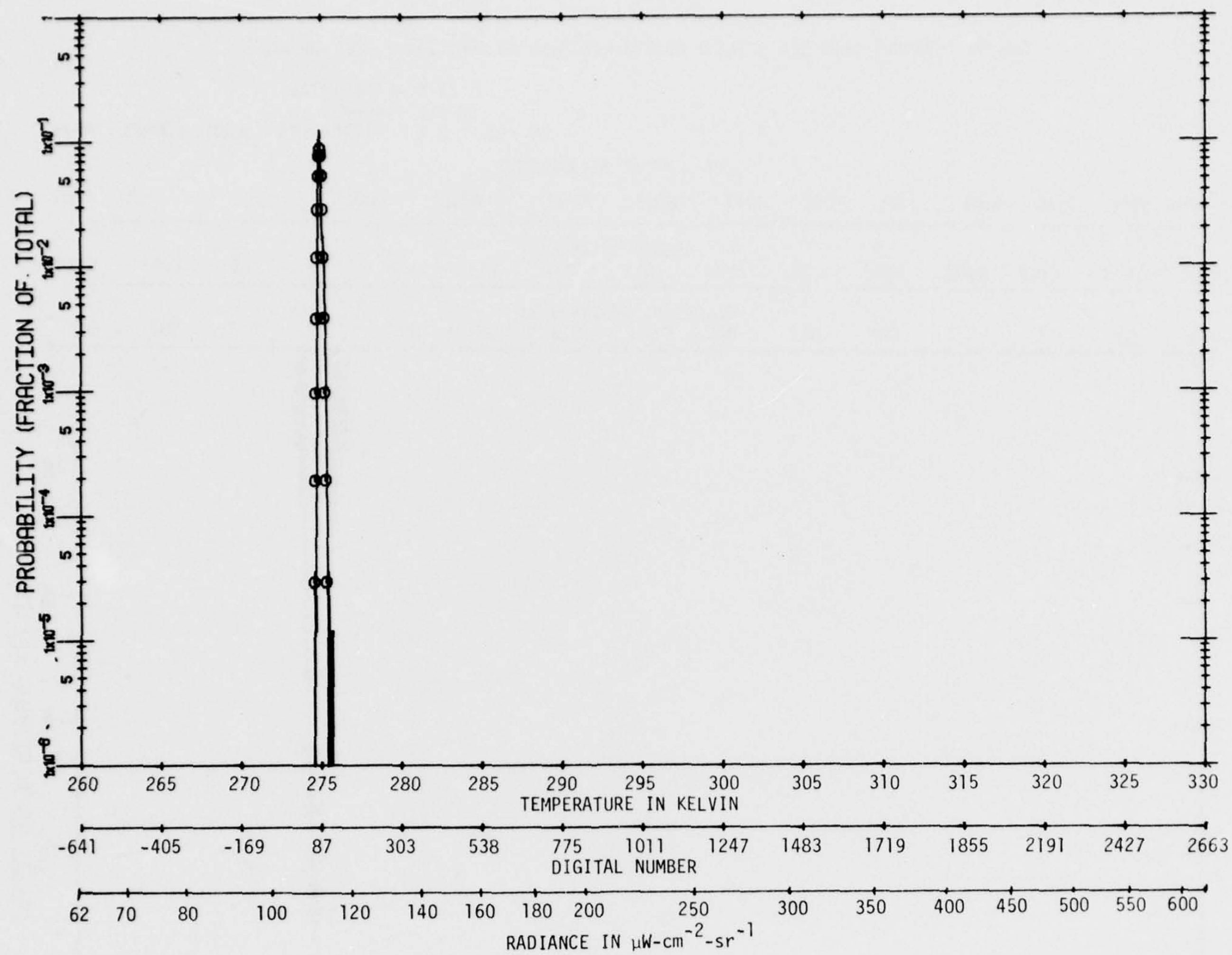
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 275.05
Std. Dev. = 0.11

FIGURE 14a. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



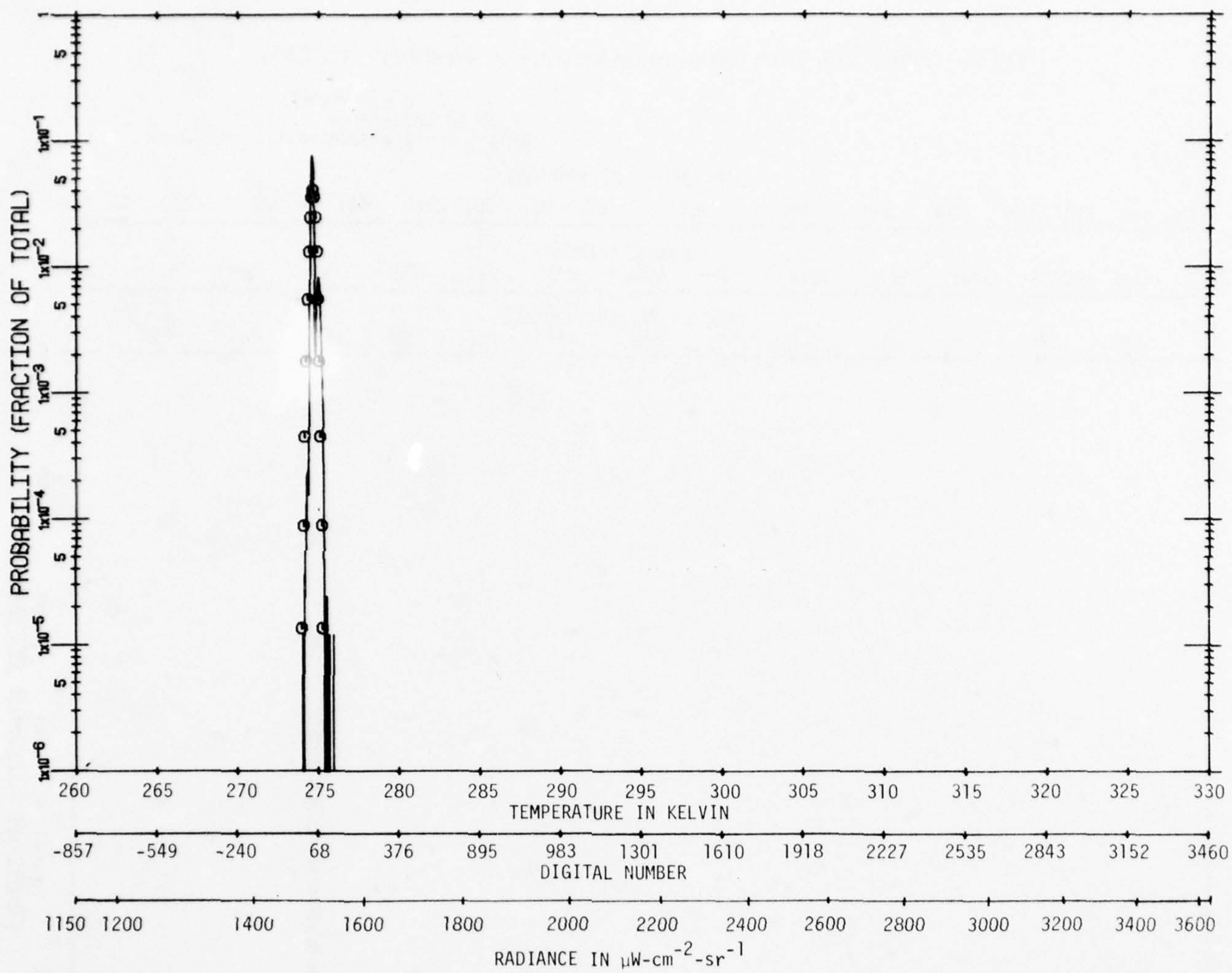
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 274.87
Std. Dev. = 0.17

FIGURE 14b. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



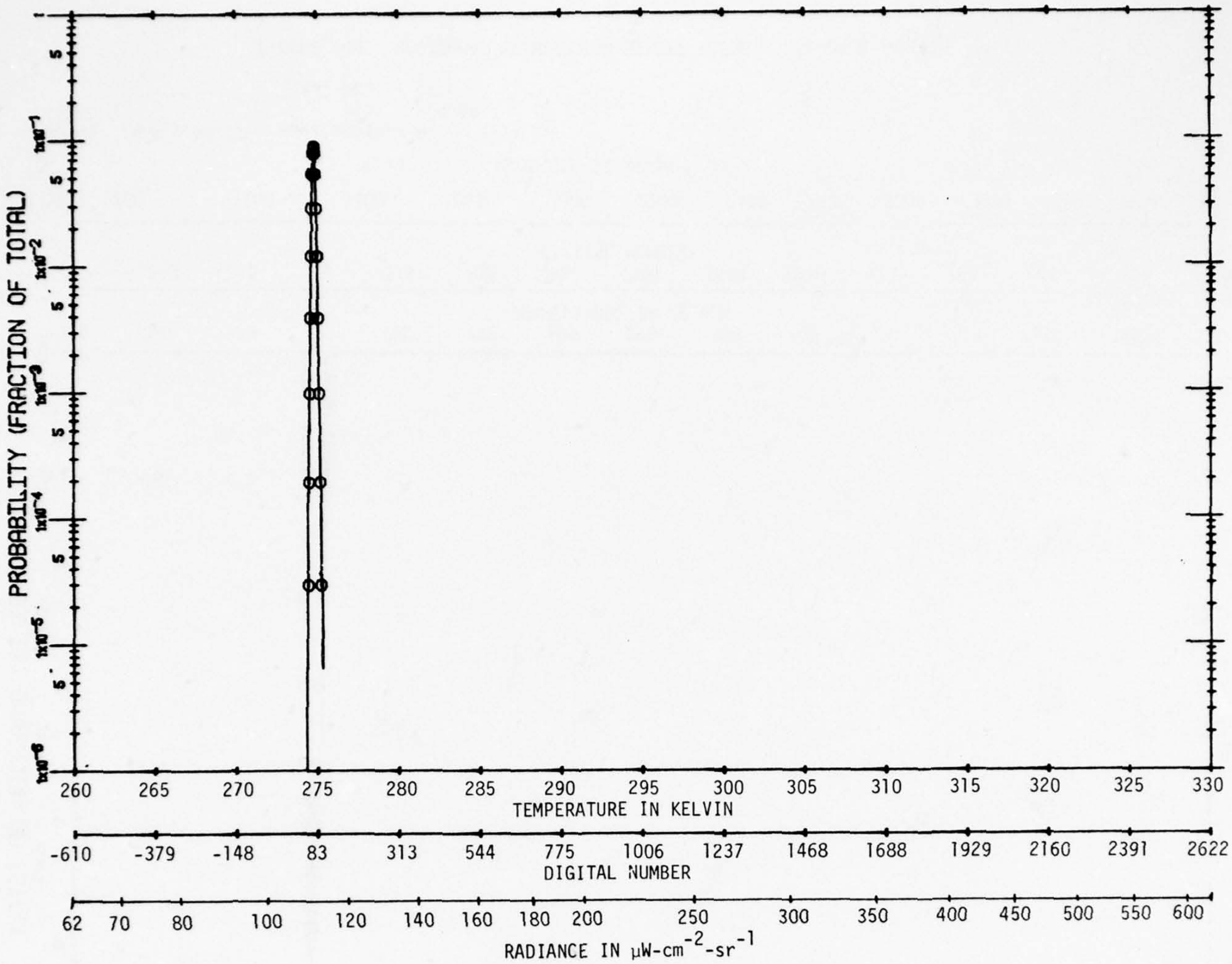
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 274.96
Std. Dev. = 0.10

FIGURE 14c. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



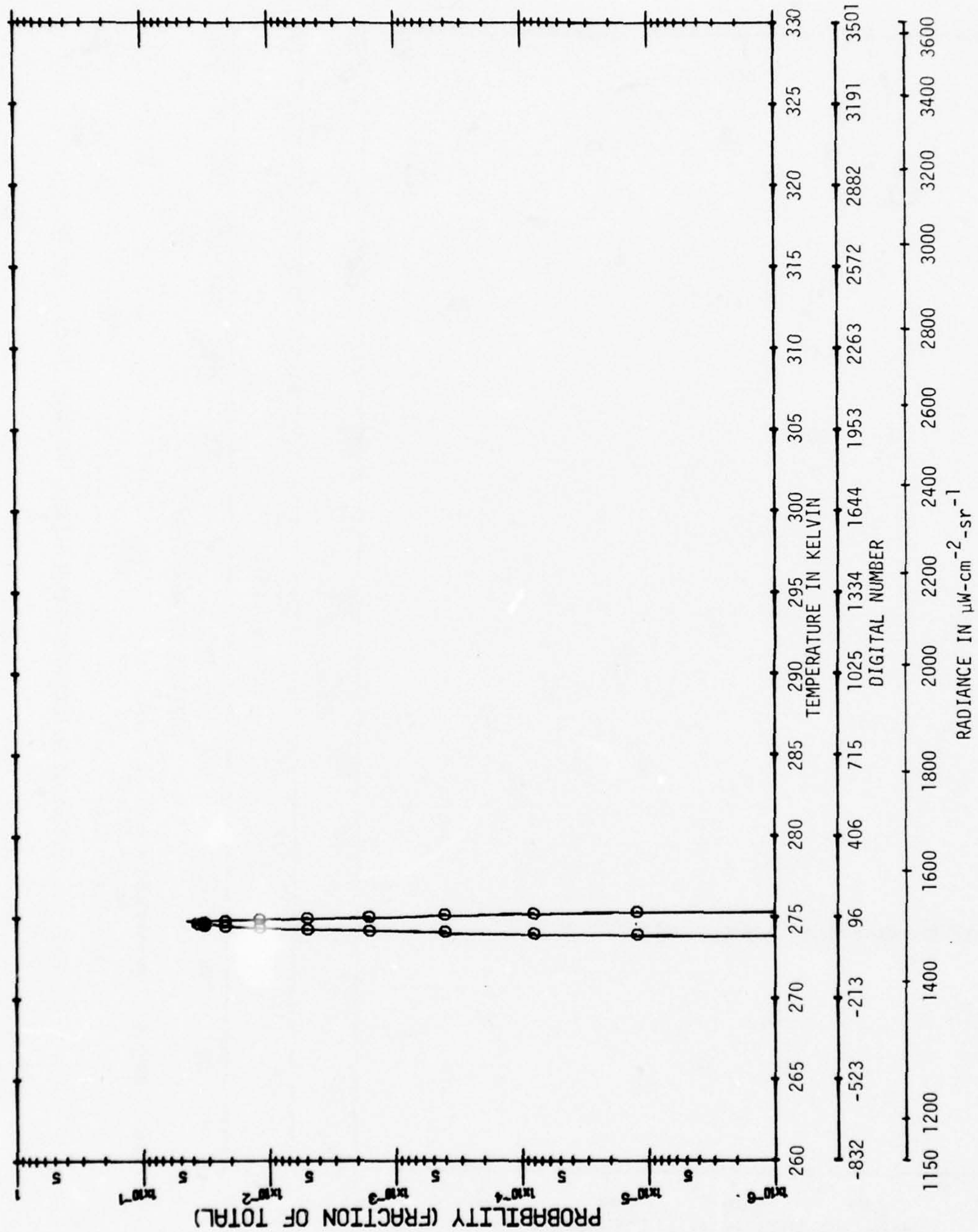
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 274.64
Std. Dev. = 0.16

FIGURE 14d. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



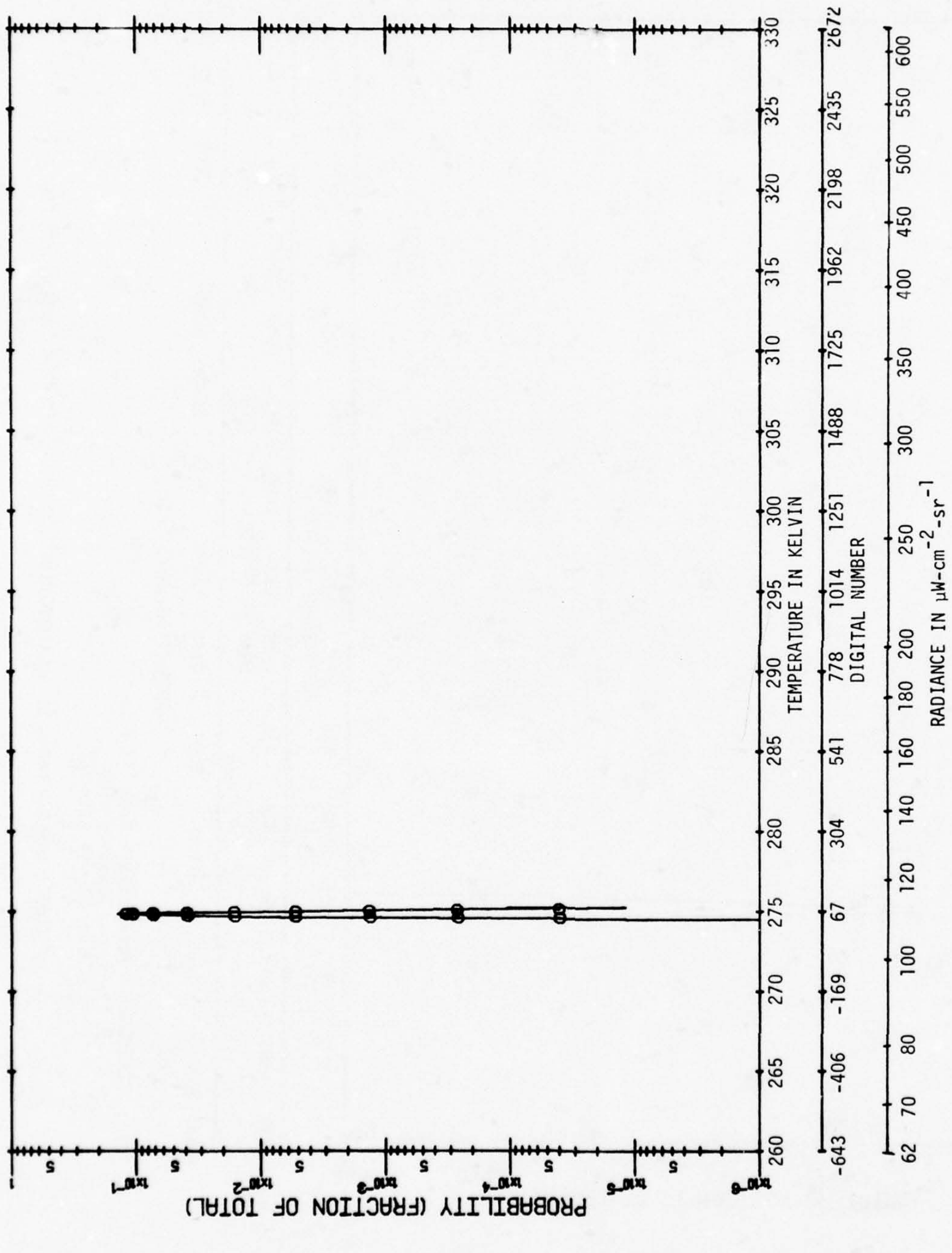
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 274.86
Std. Dev. = 0.10

FIGURE 15a. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



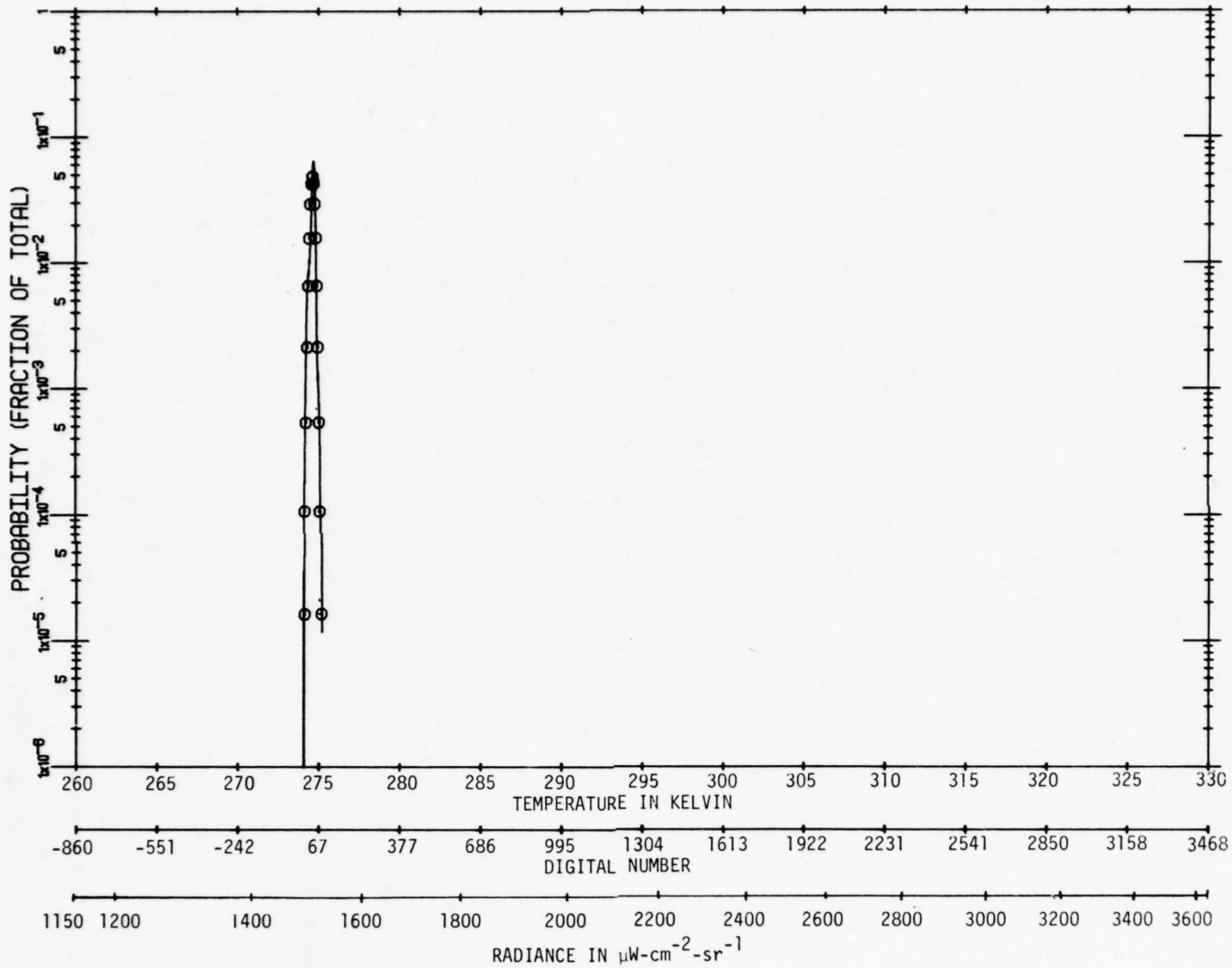
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 274.66
Std. Dev. = 0.18

FIGURE 15b. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



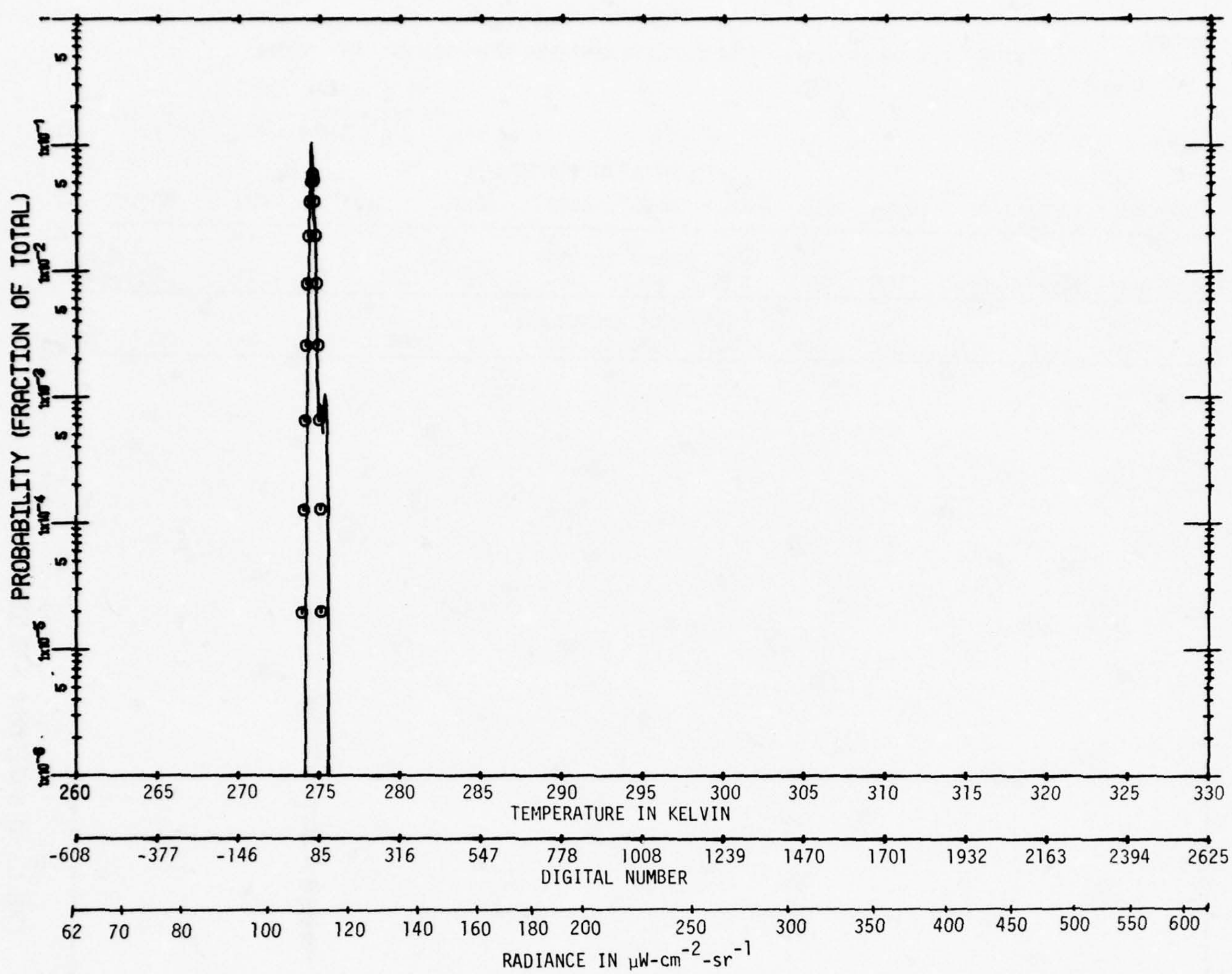
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 274.83
Std. Dev. = 0.07

FIGURE 15c. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



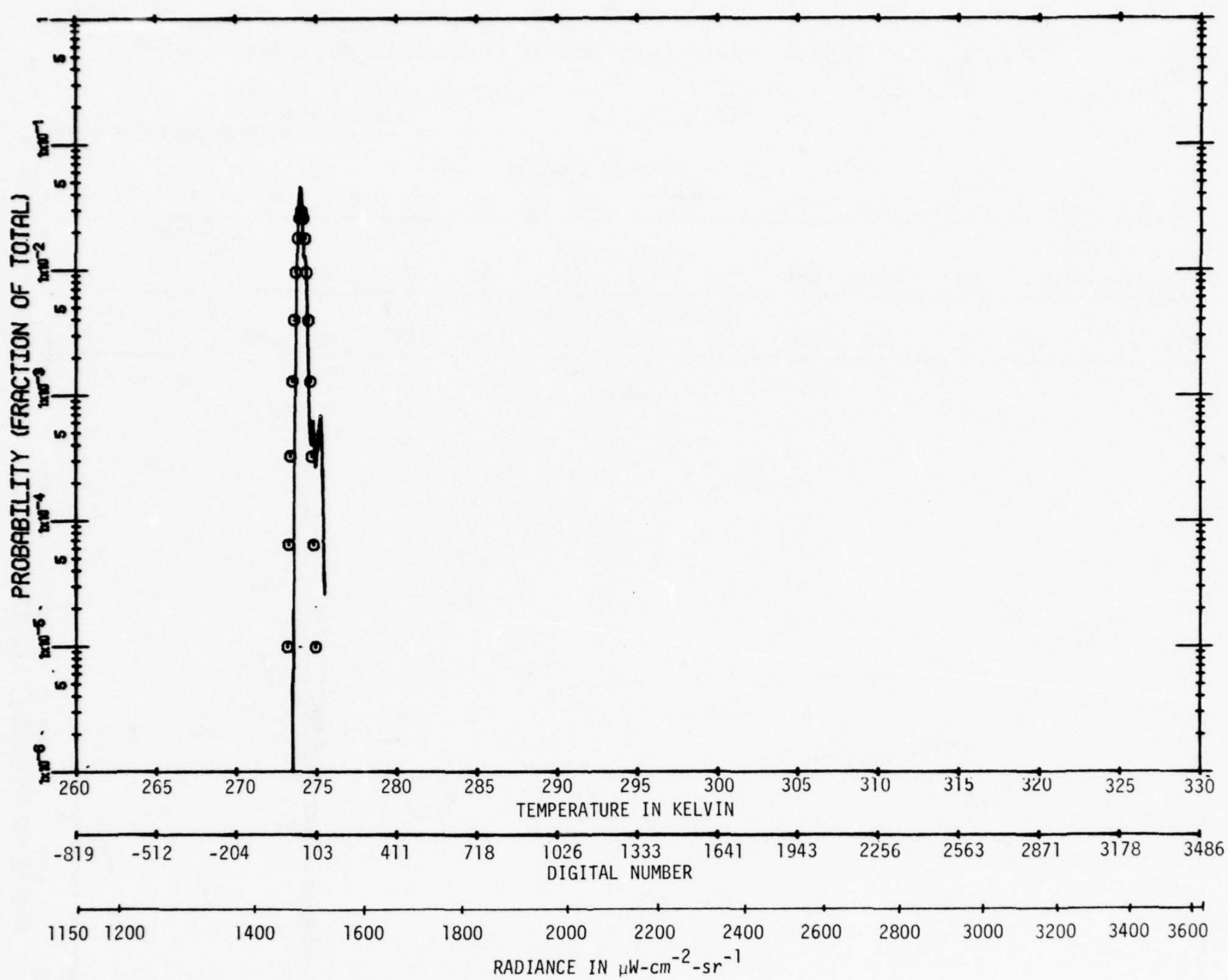
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 274.66
Std. Dev. = 0.13

FIGURE 15d. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



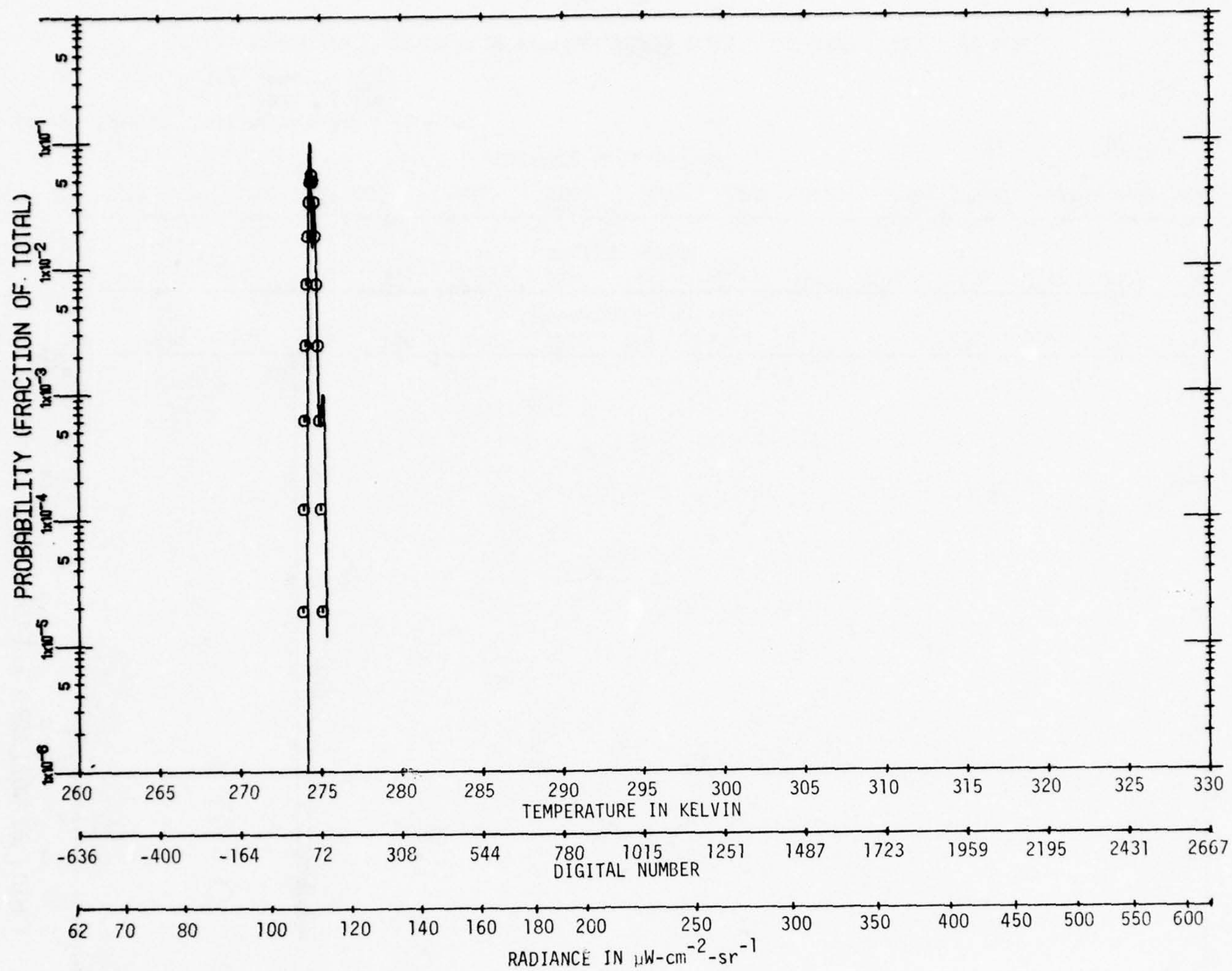
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 274.55
Std. Dev. = 0.15

FIGURE 16a. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



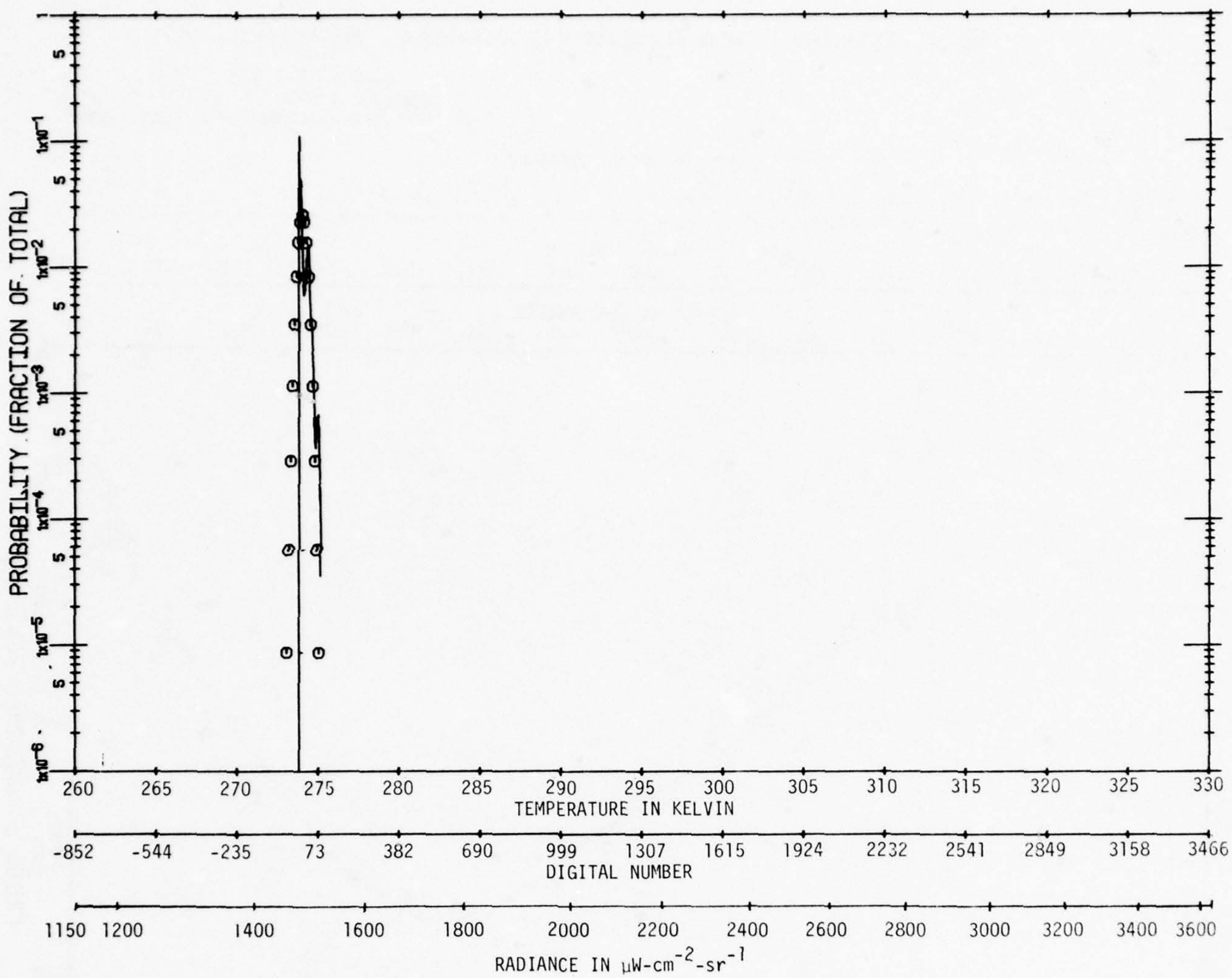
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.07
Std. Dev. = 0.22

FIGURE 16b. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 90 DEG.)



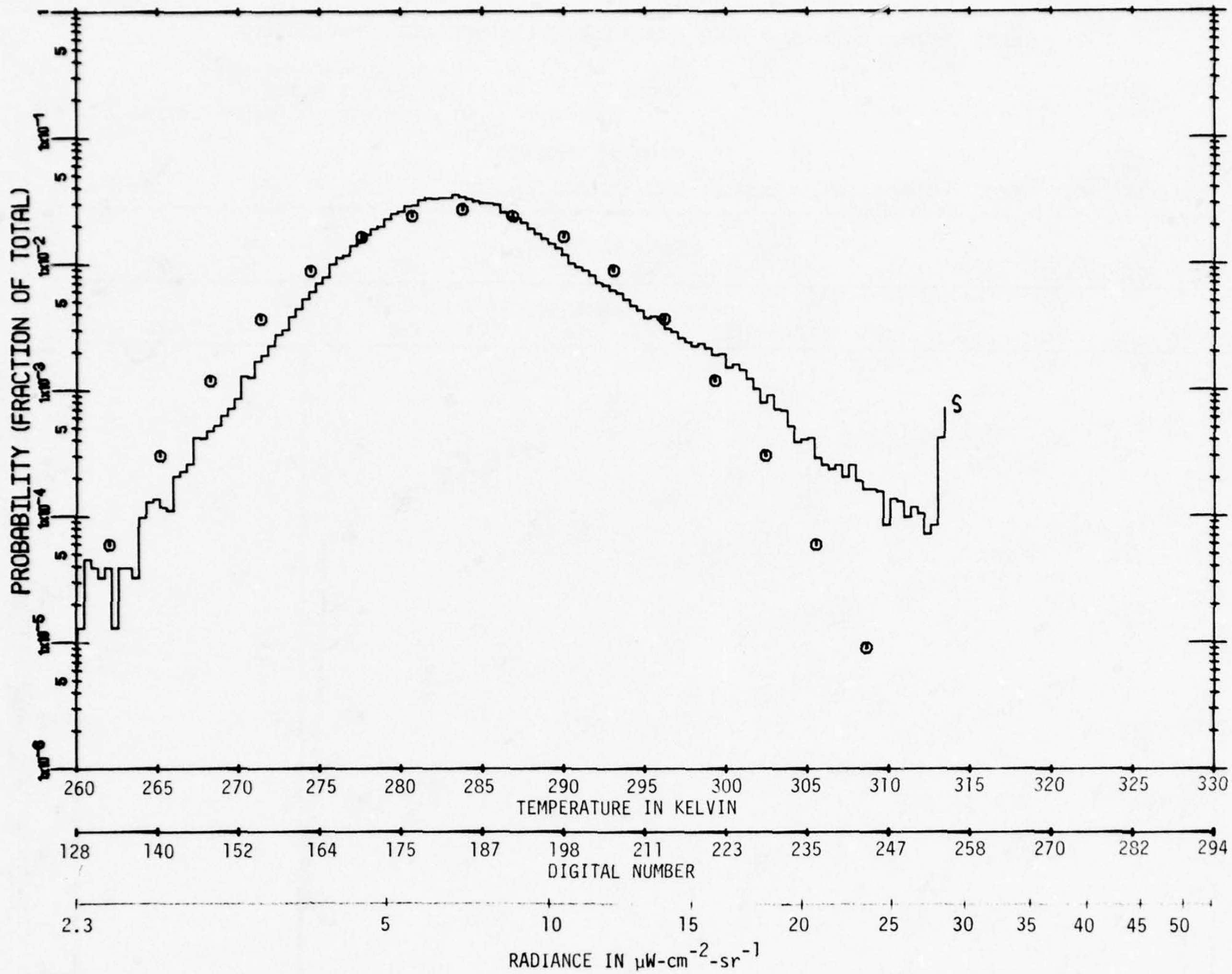
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 274.45
Std. Dev. = 0.15

FIGURE 16c. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



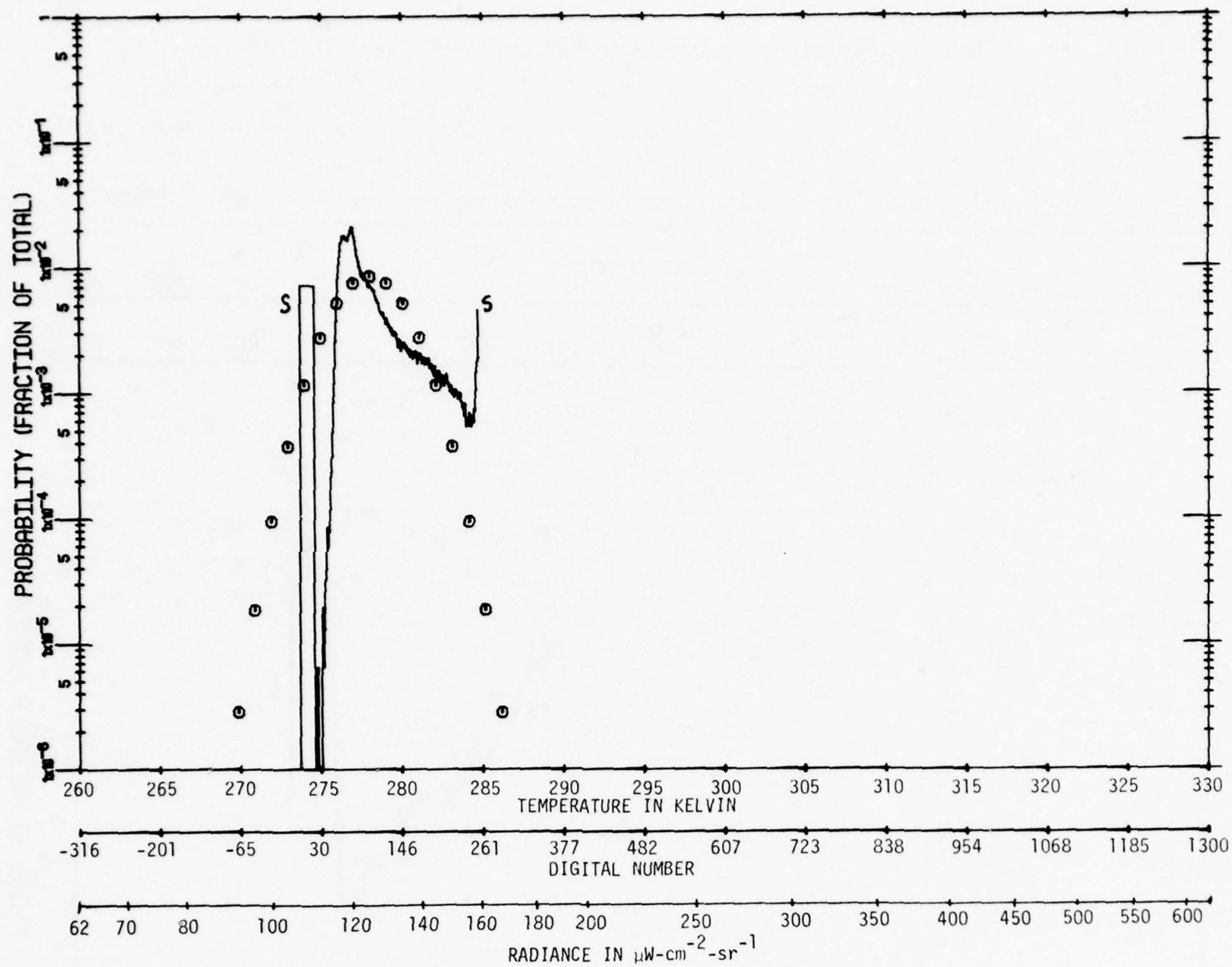
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.07
Std. Dev. = 0.25

FIGURE 16d. HISTOGRAM OF MICHIGAN WINTER SCENE - PRE-DAWN (ANGLE: 35 DEG.)



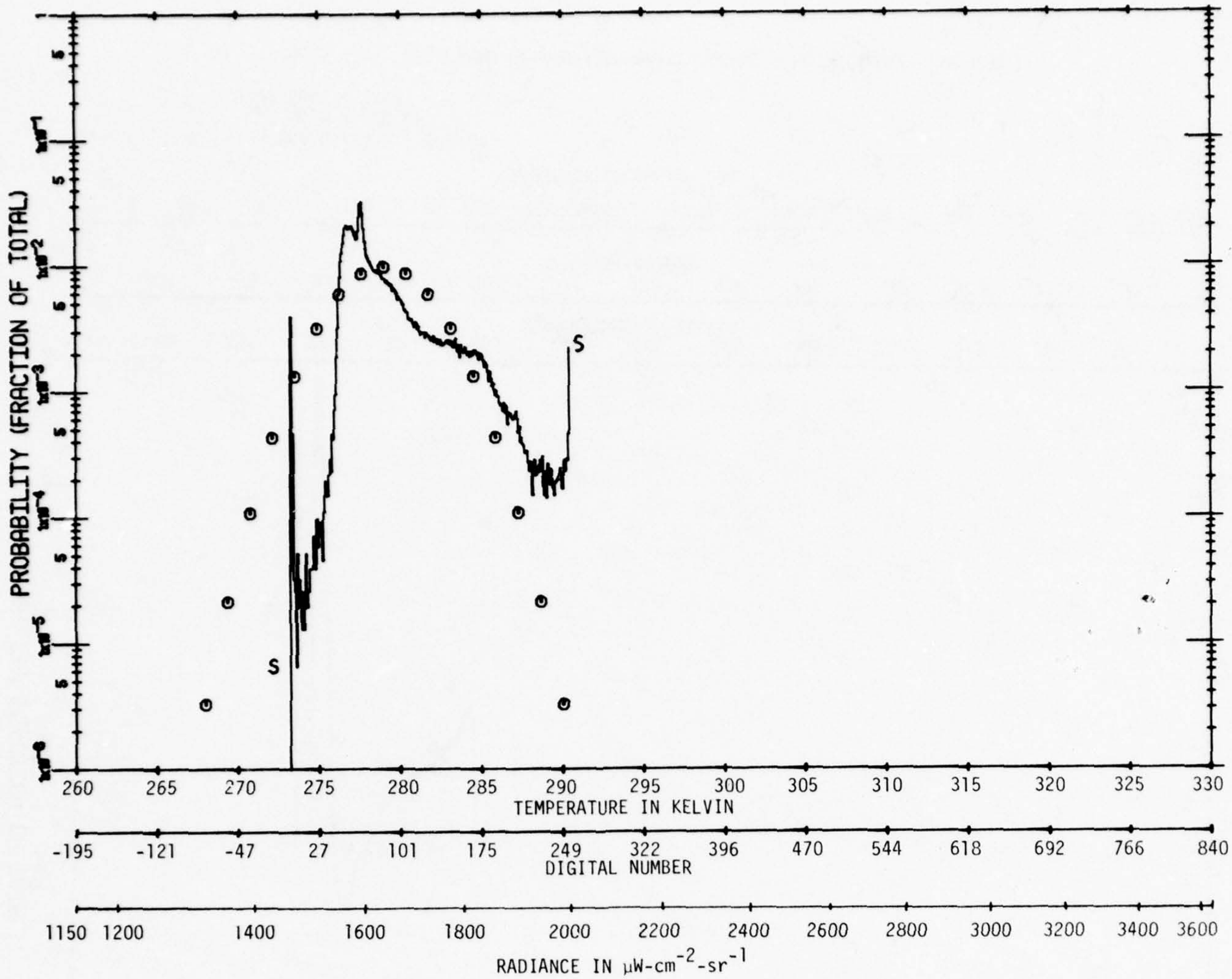
Area: CITY Wavelength = 3.5 - 3.9 μm
Mean = 283.80
Std. Dev. = 6.21

FIGURE 17a. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



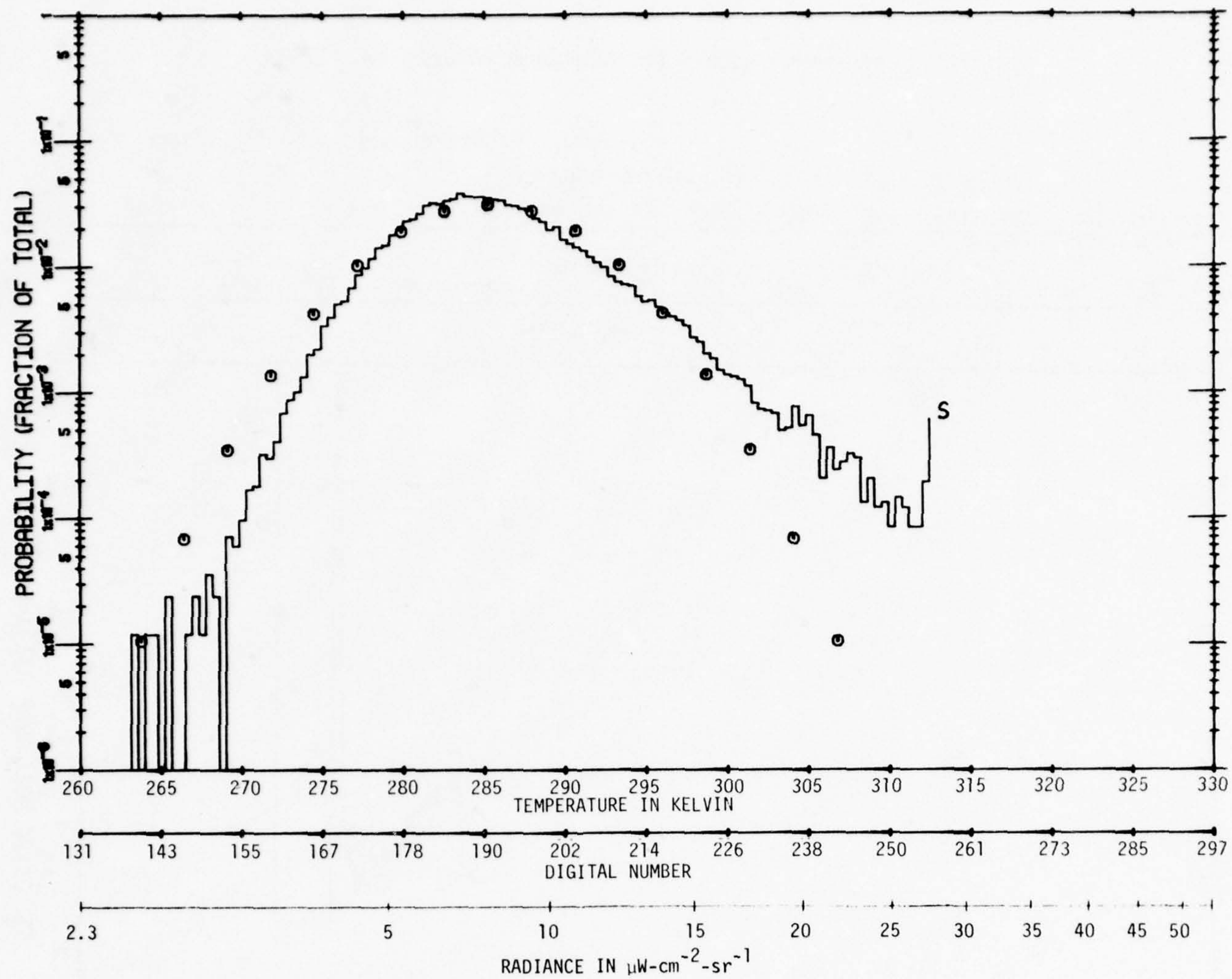
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 278.05
Std. Dev. = 2.04

FIGURE 17b. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



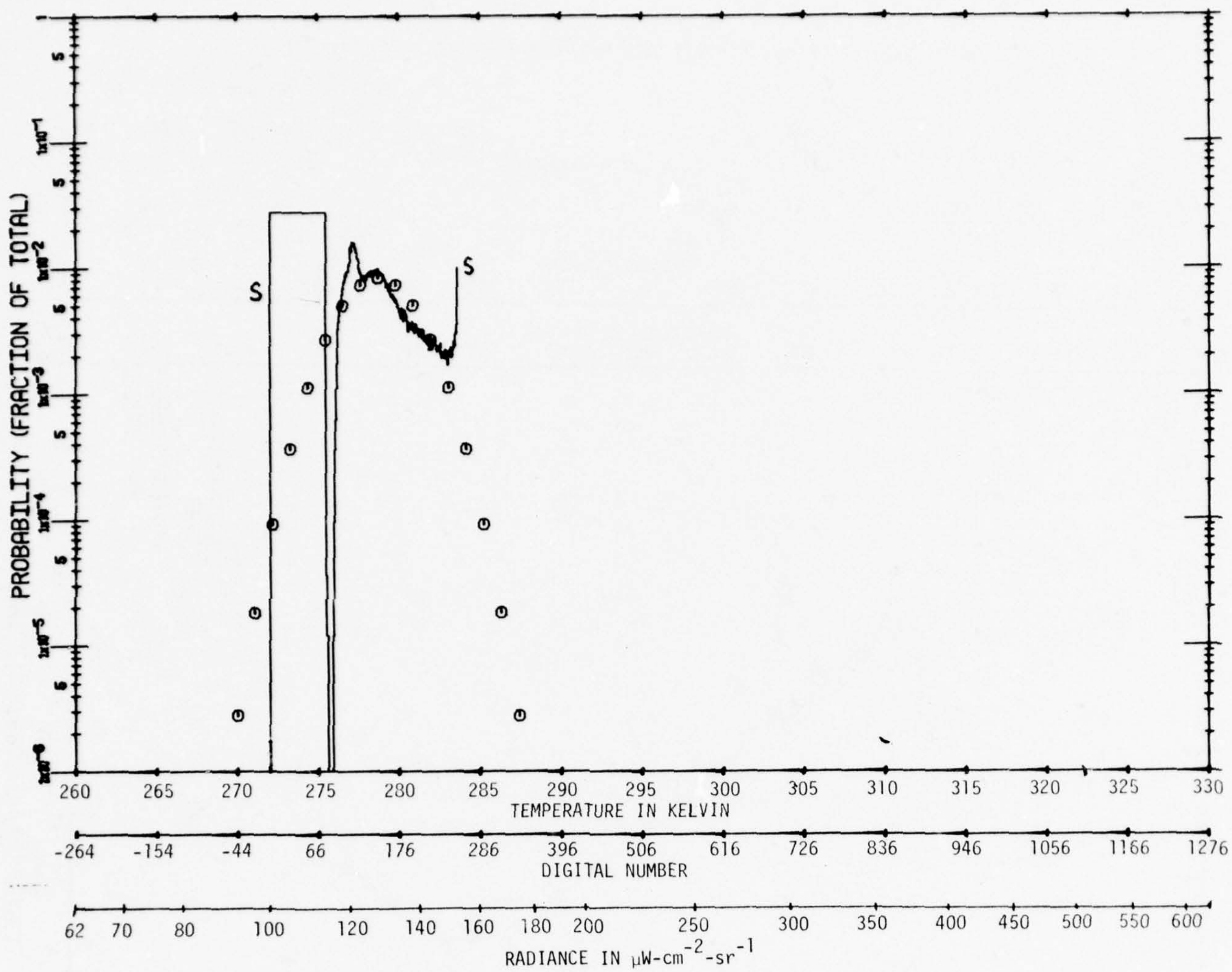
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 279.05
Std. Dev. = 2.76

FIGURE 17c. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



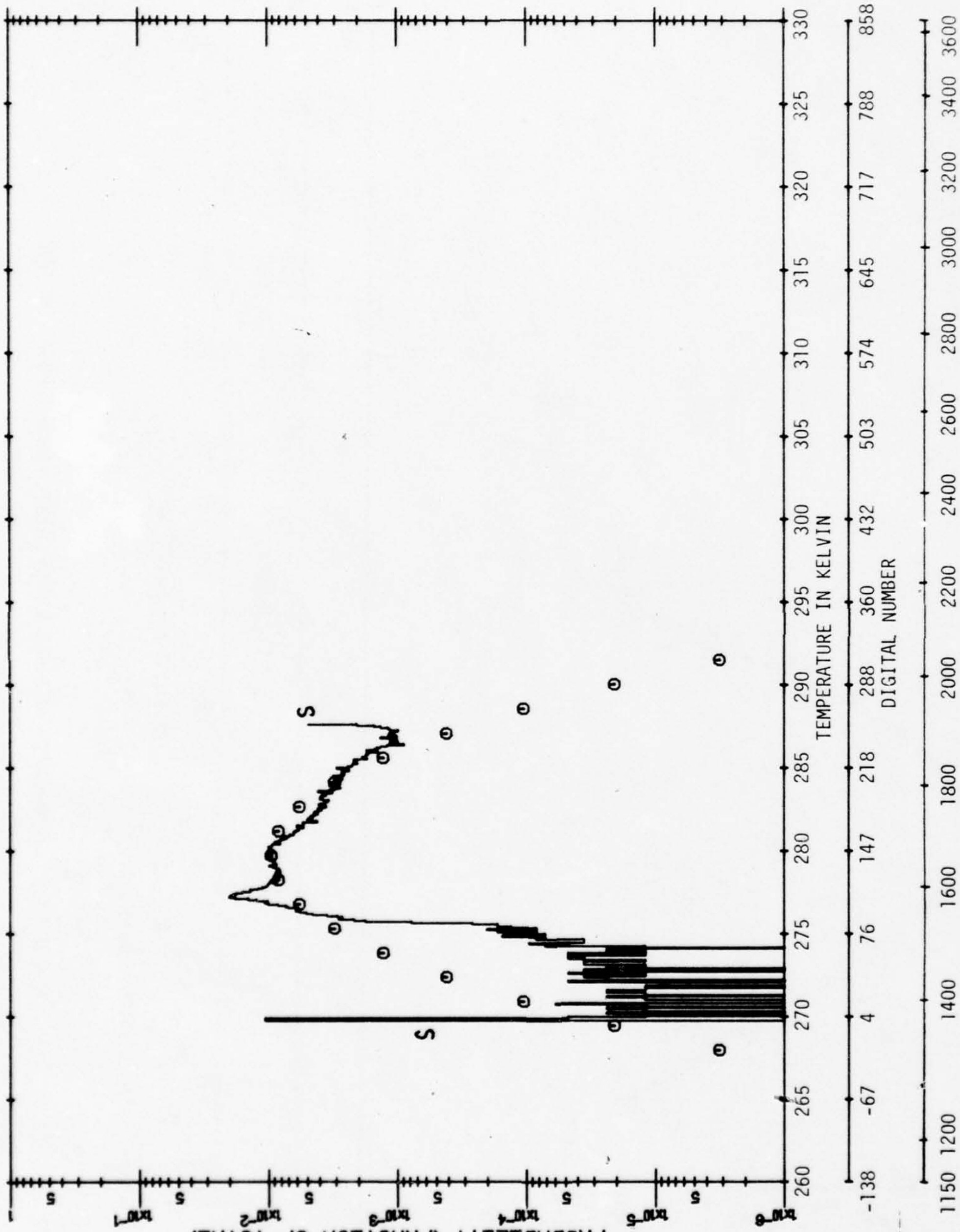
Area: CITY Wavelength = 3.5 - 3.9 μm
Mean = 285.27
Std. Dev. = 5.38

FIGURE 17d. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



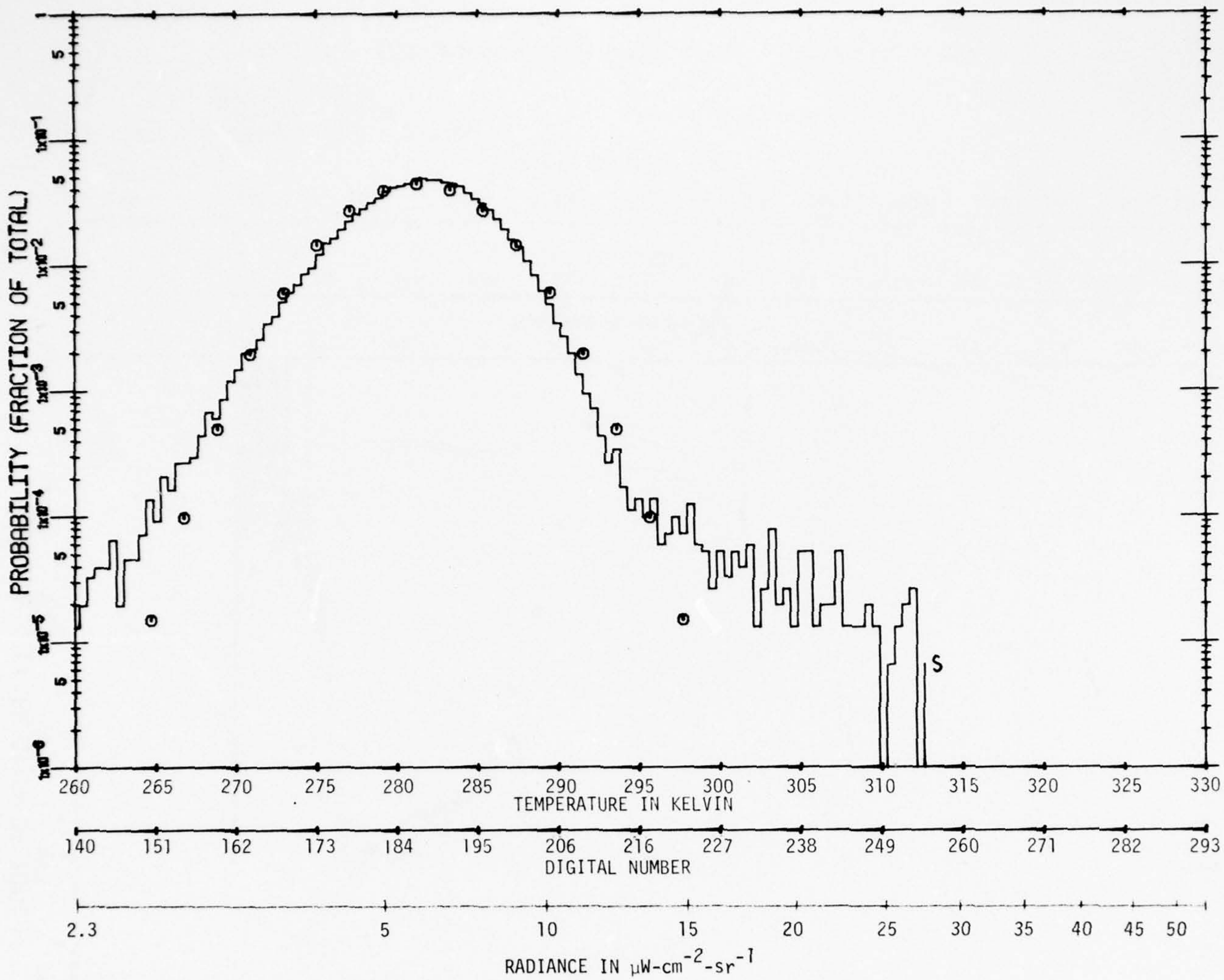
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 278.70
Std. Dev. = 2.18

FIGURE 17e. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



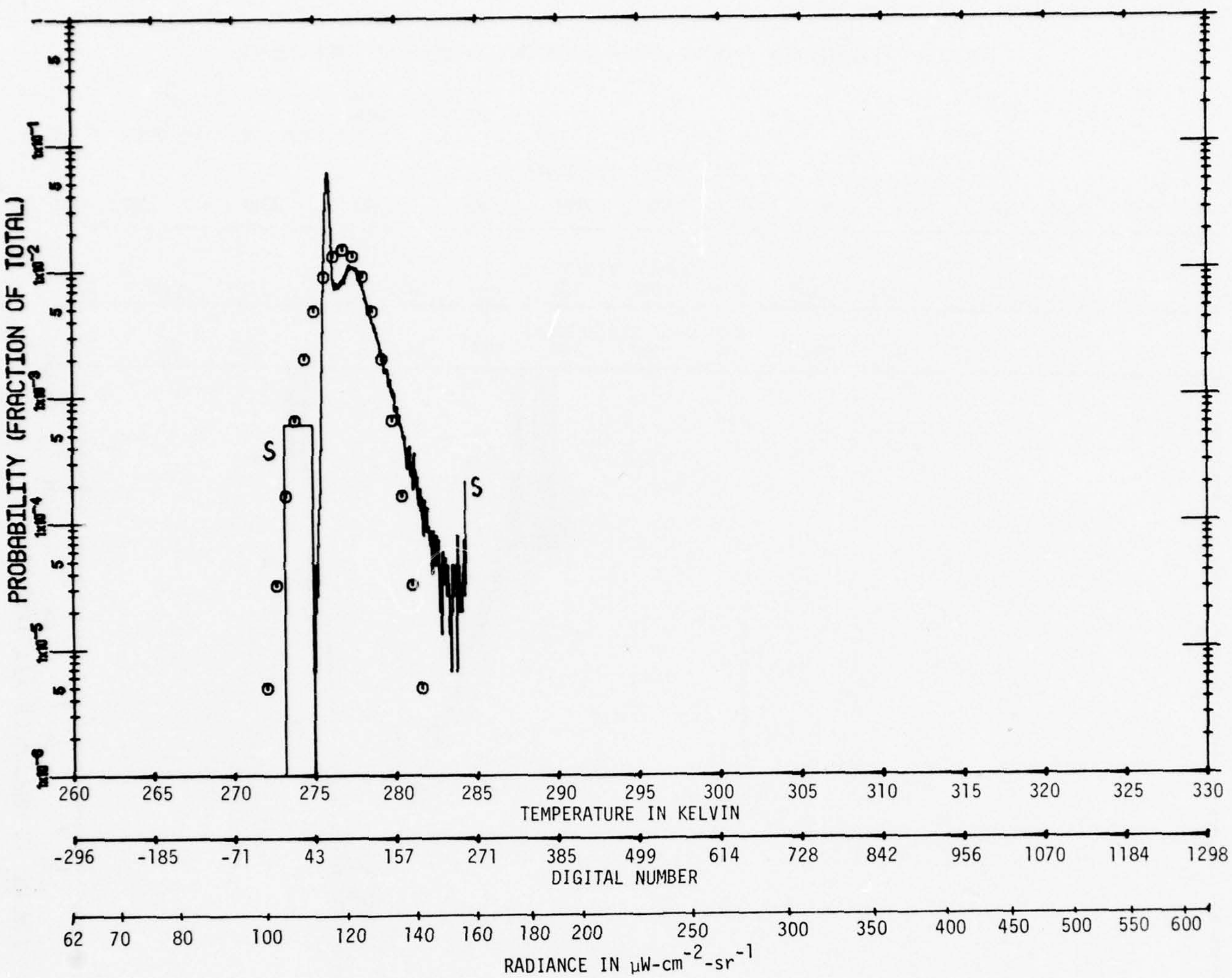
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 279.74
Std. Dev. = 2.94

FIGURE 17f. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



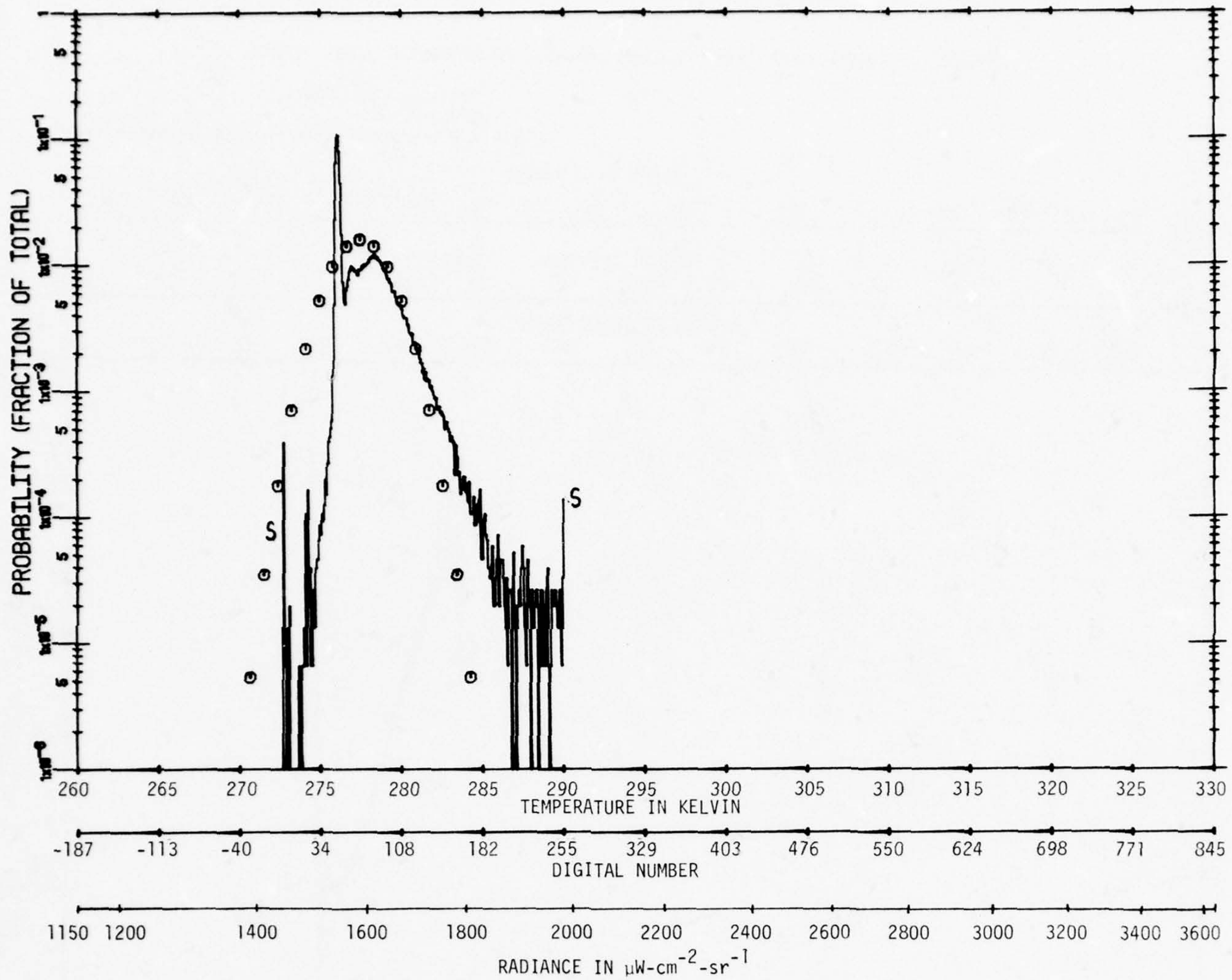
Area: LAND & WATER Wavelength = 3.5 - 3.9 μm
Mean = 281.20
Std. Dev. = 4.12

FIGURE 18a. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



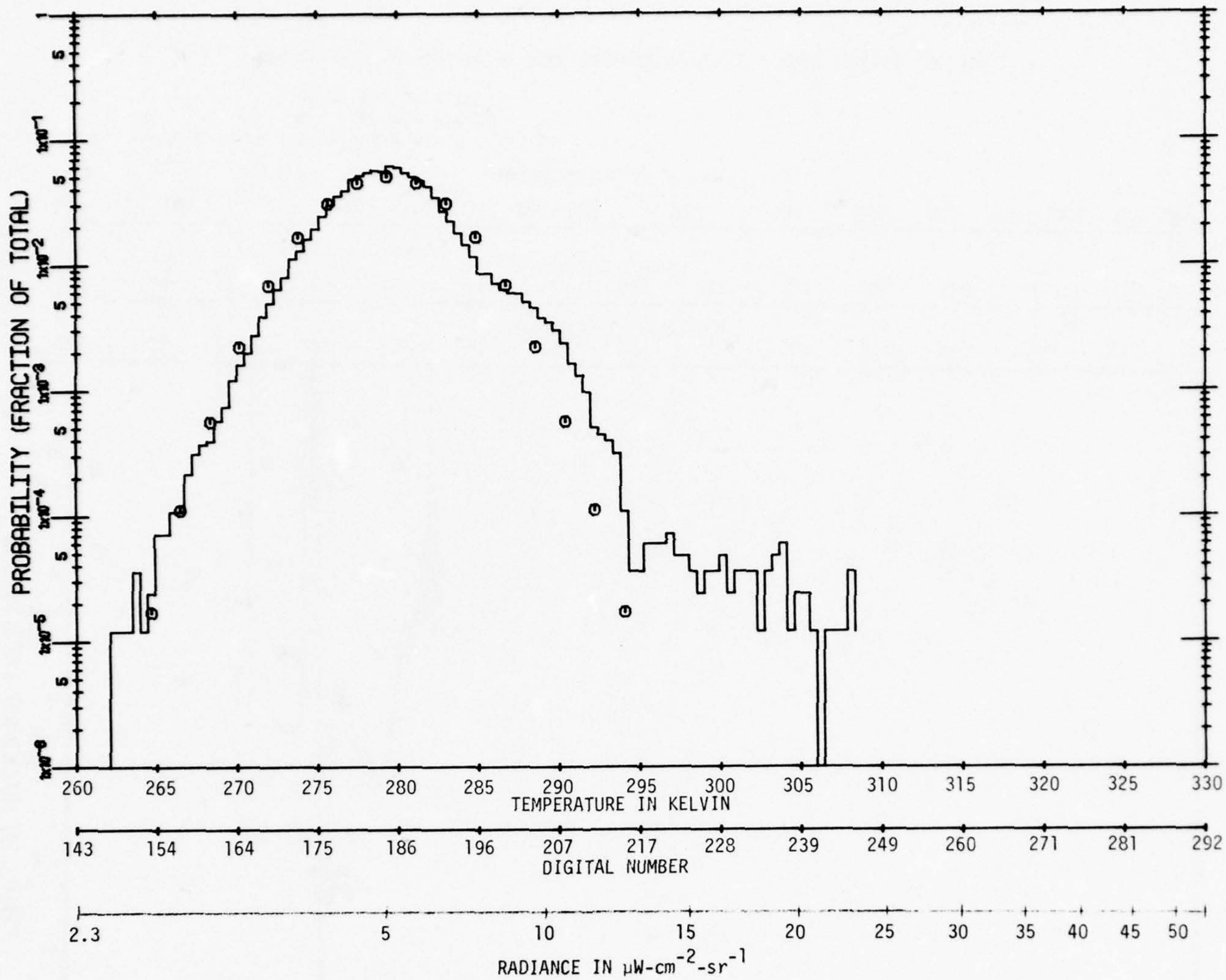
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 276.81
Std. Dev. = 1.20

FIGURE 18b. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



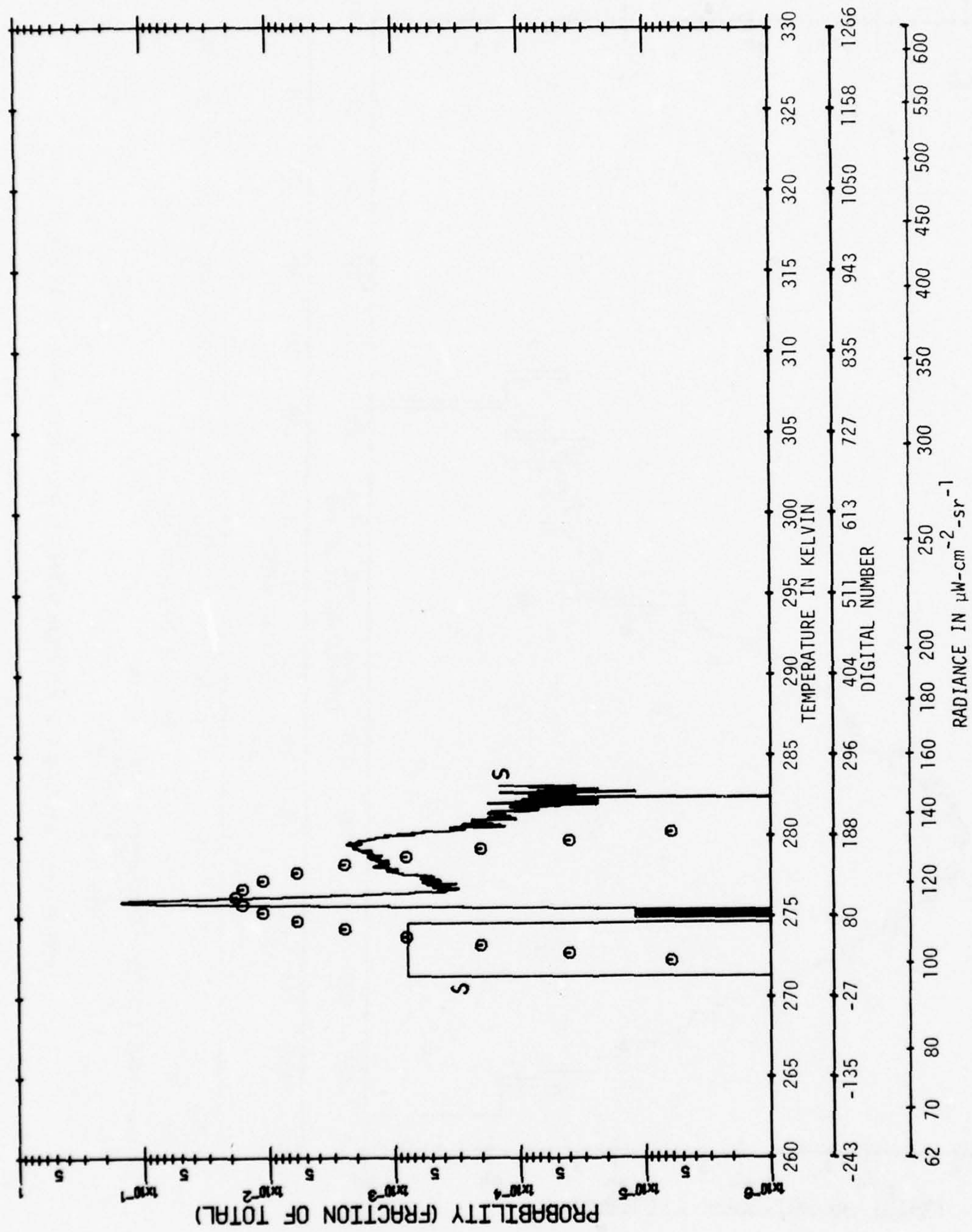
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 277.47
Std. Dev. = 1.70

FIGURE 18c. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



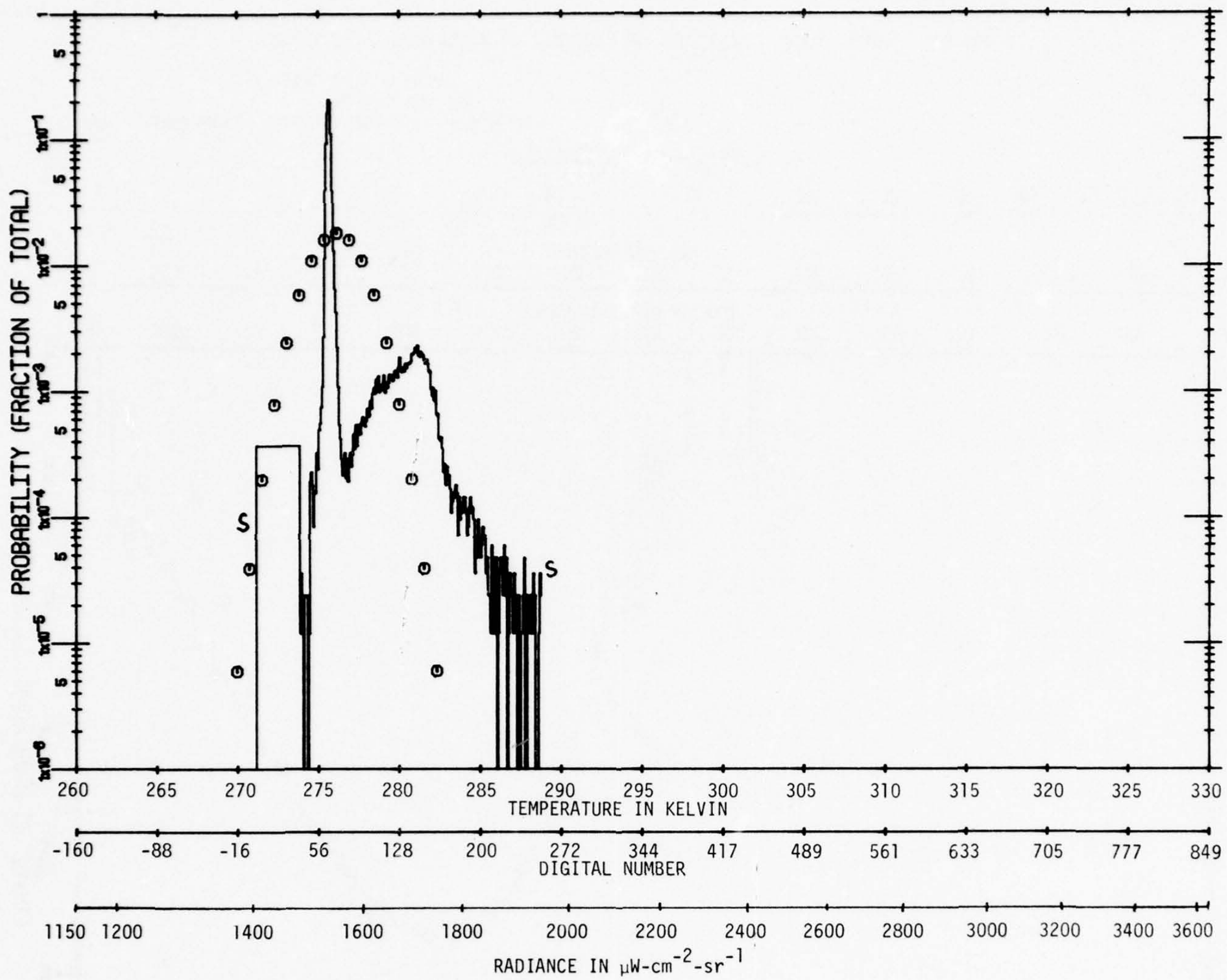
Area: LAND & WATER Wavelength = 3.5 - 3.9 μm
Mean = 279.37
Std. Dev. = 3.68

FIGURE 18d. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



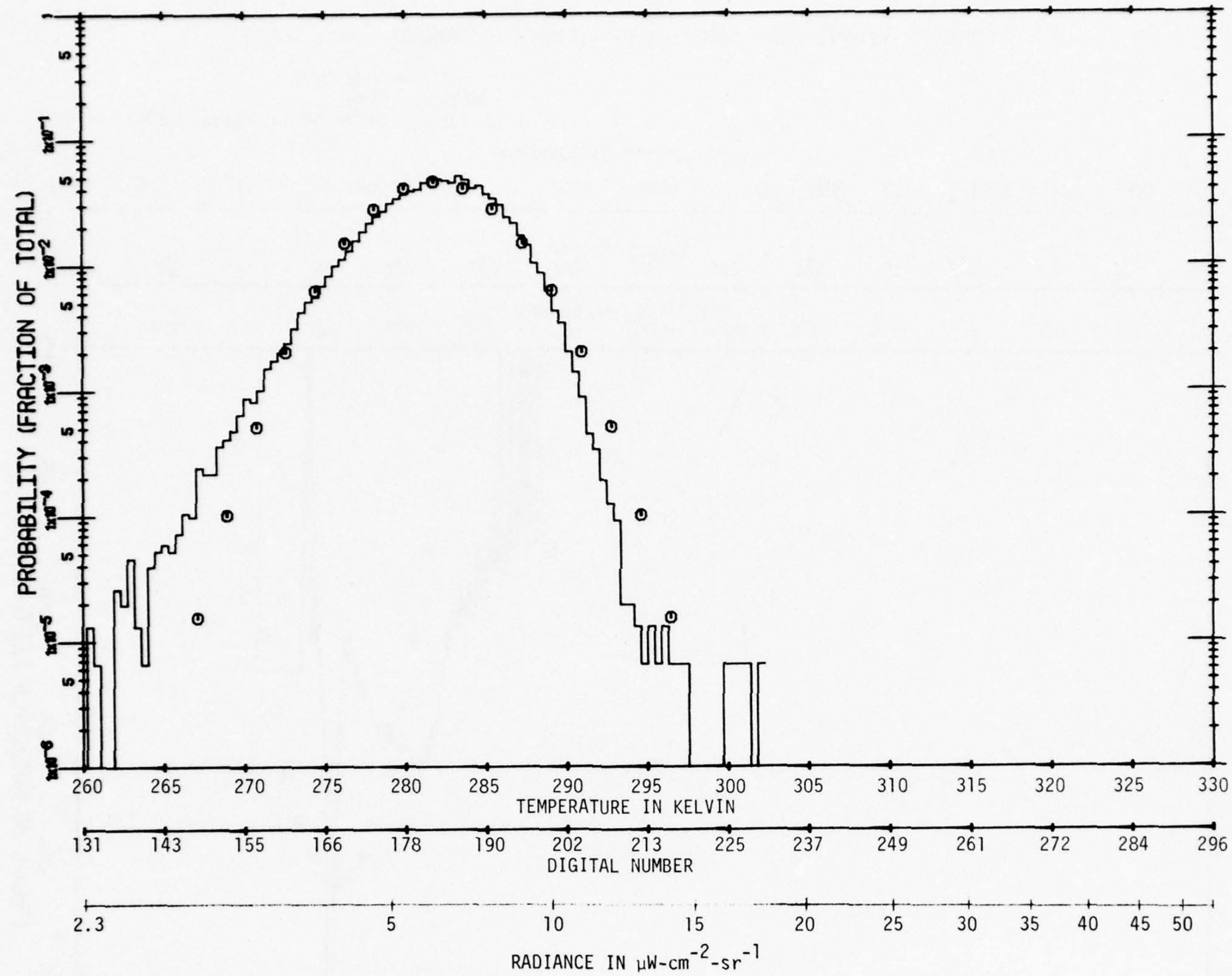
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 276.23
Std. Dev. = 1.00

FIGURE 18e. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



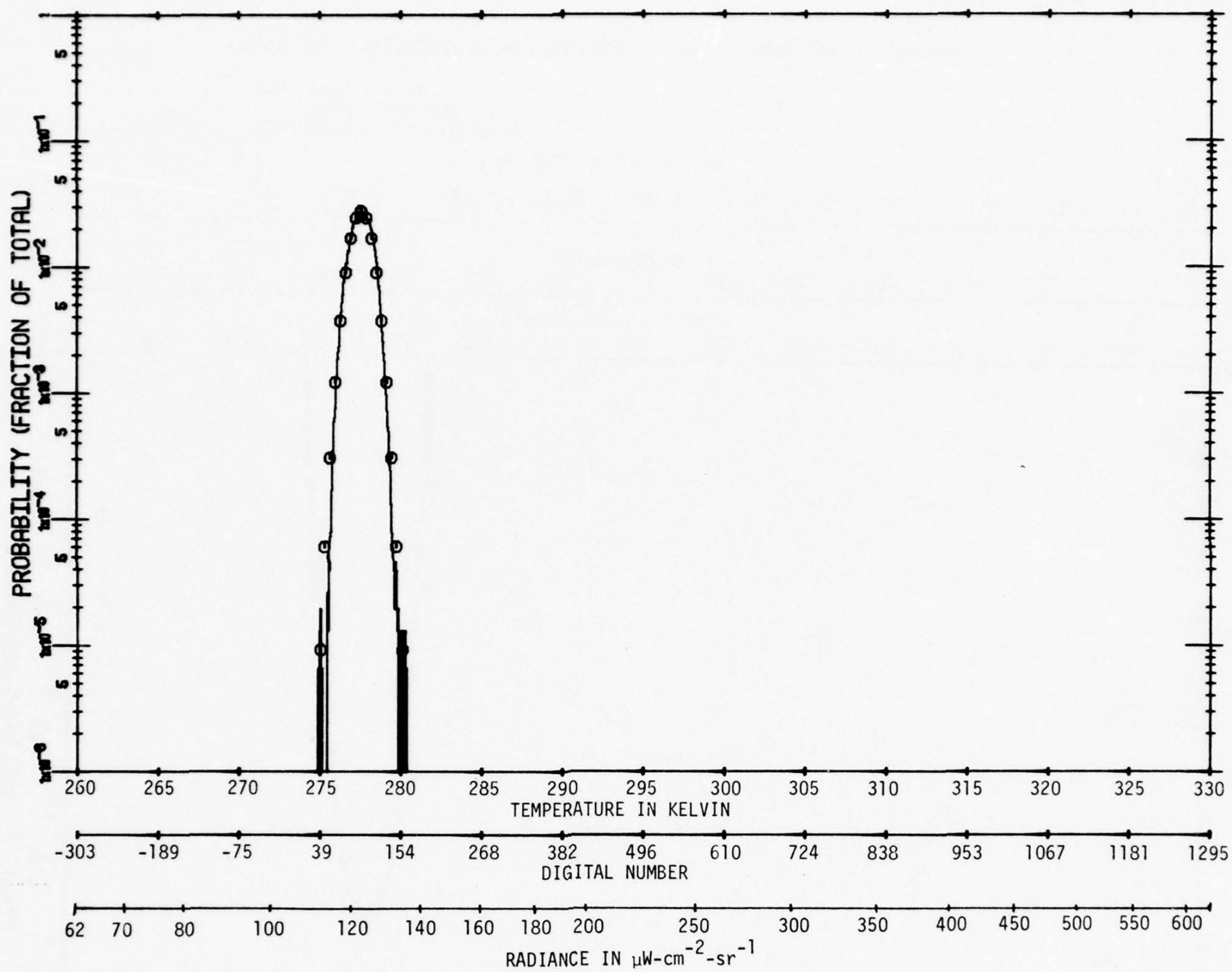
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 276.16
Std. Dev. = 1.55

FIGURE 18f. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



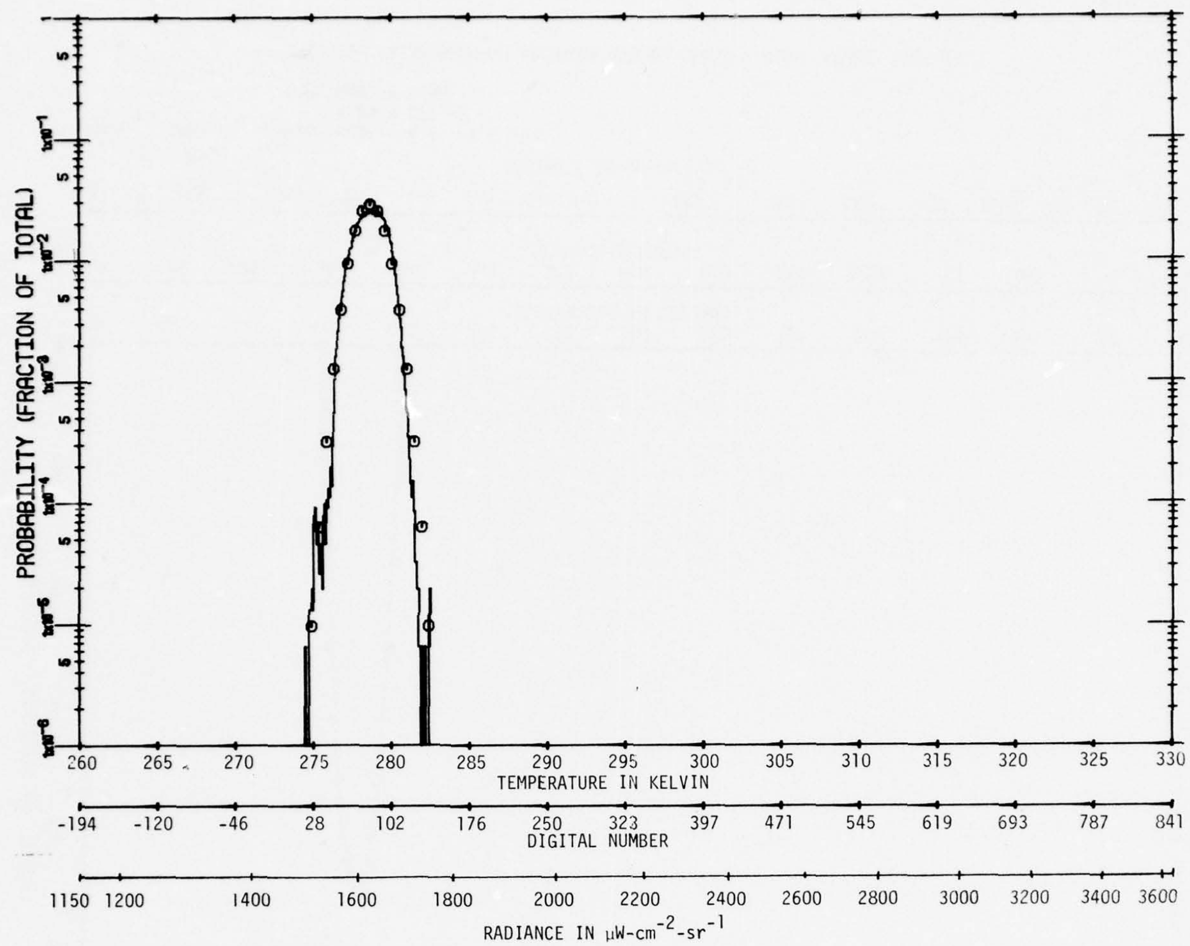
Area: CONIFERS Wavelength = 3.5 - 3.9 μm
Mean = 281.77
Std. Dev. = 3.67

FIGURE 19a. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



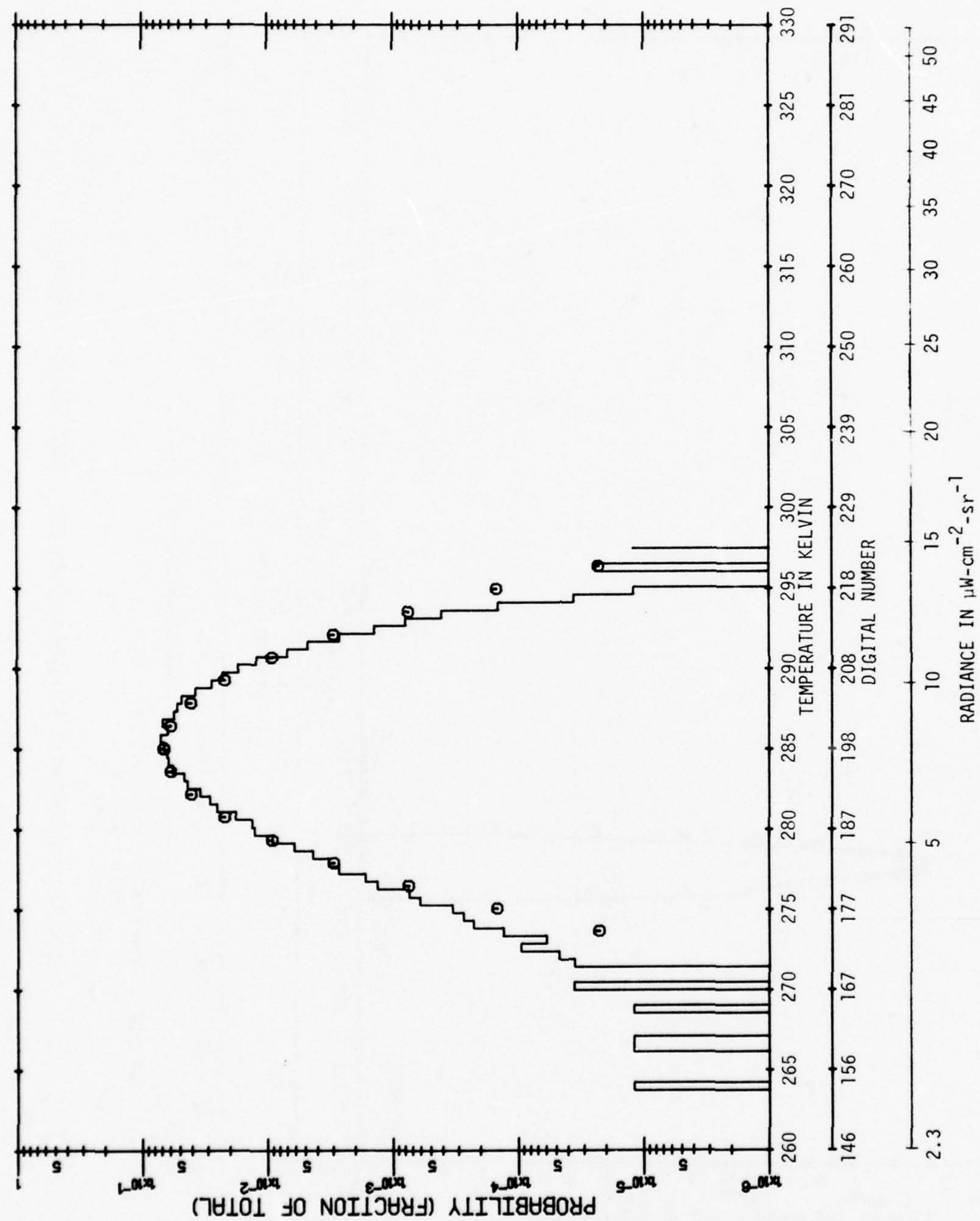
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 277.58
Std. Dev. = 0.63

FIGURE 19b. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



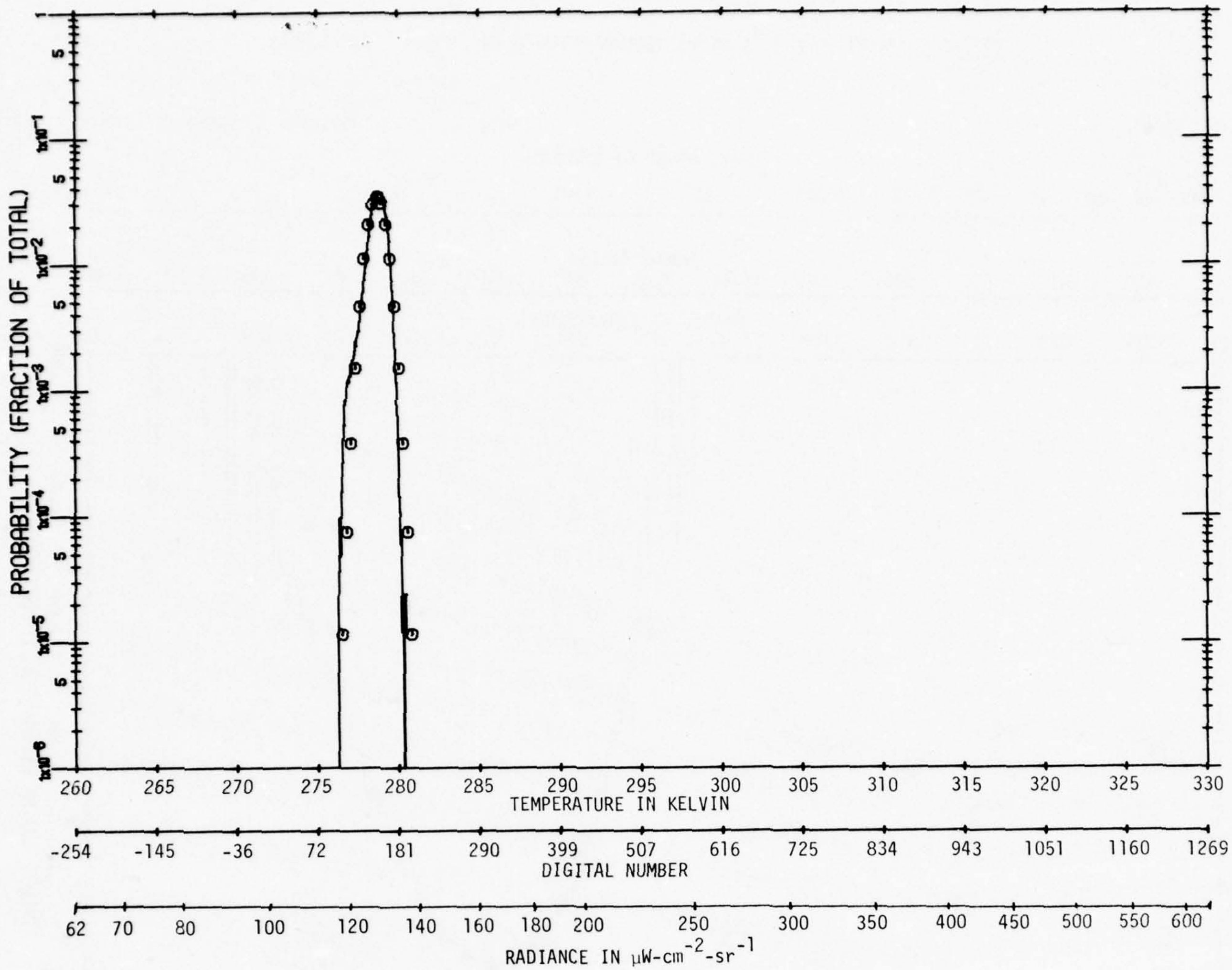
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 278.68
Std. Dev. = 0.94

FIGURE 19c. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



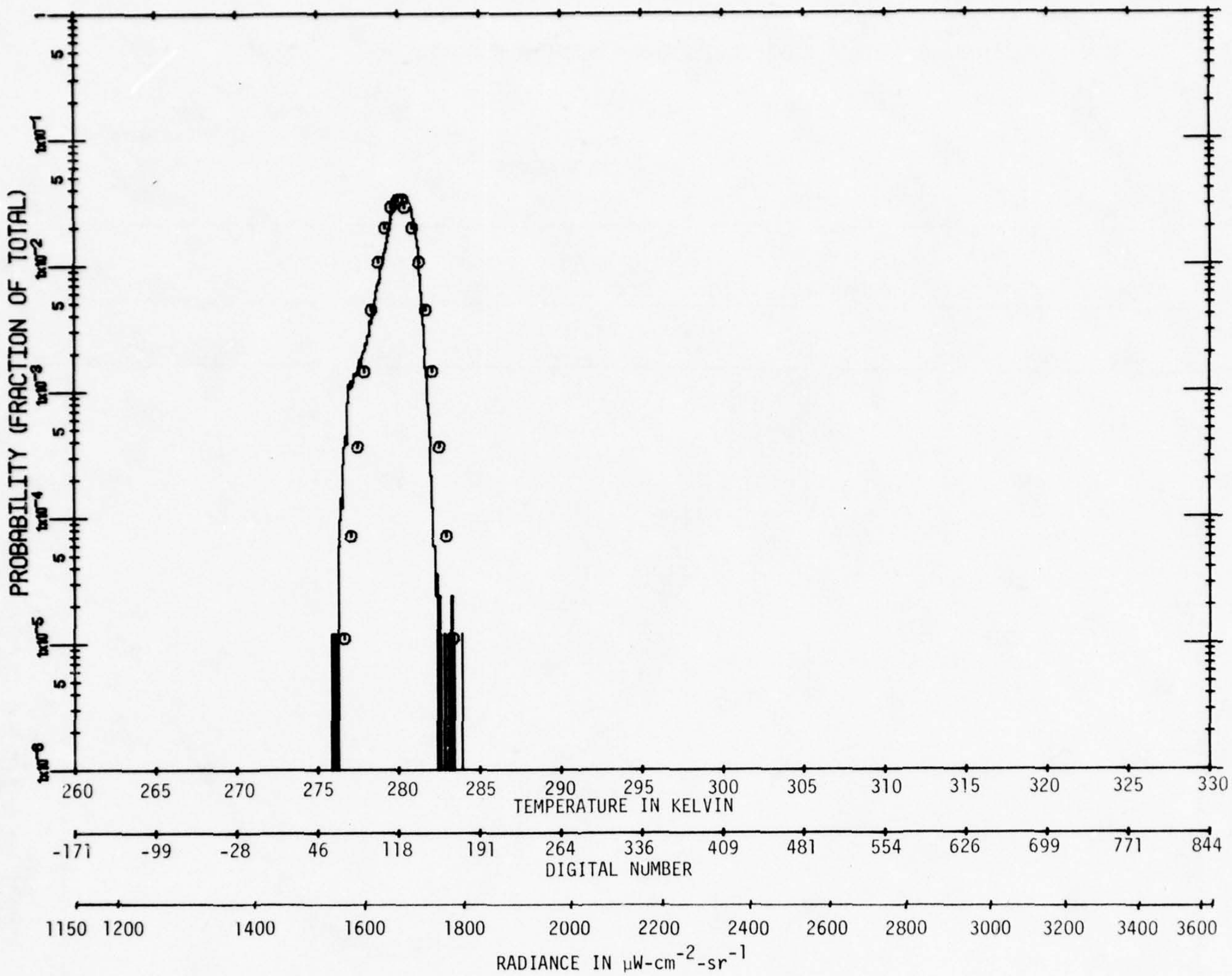
Area: CONIFERS Wavelength = 3.5 - 3.9 μm
Mean = 285.05
Std. Dev. = 2.84

FIGURE 19d. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



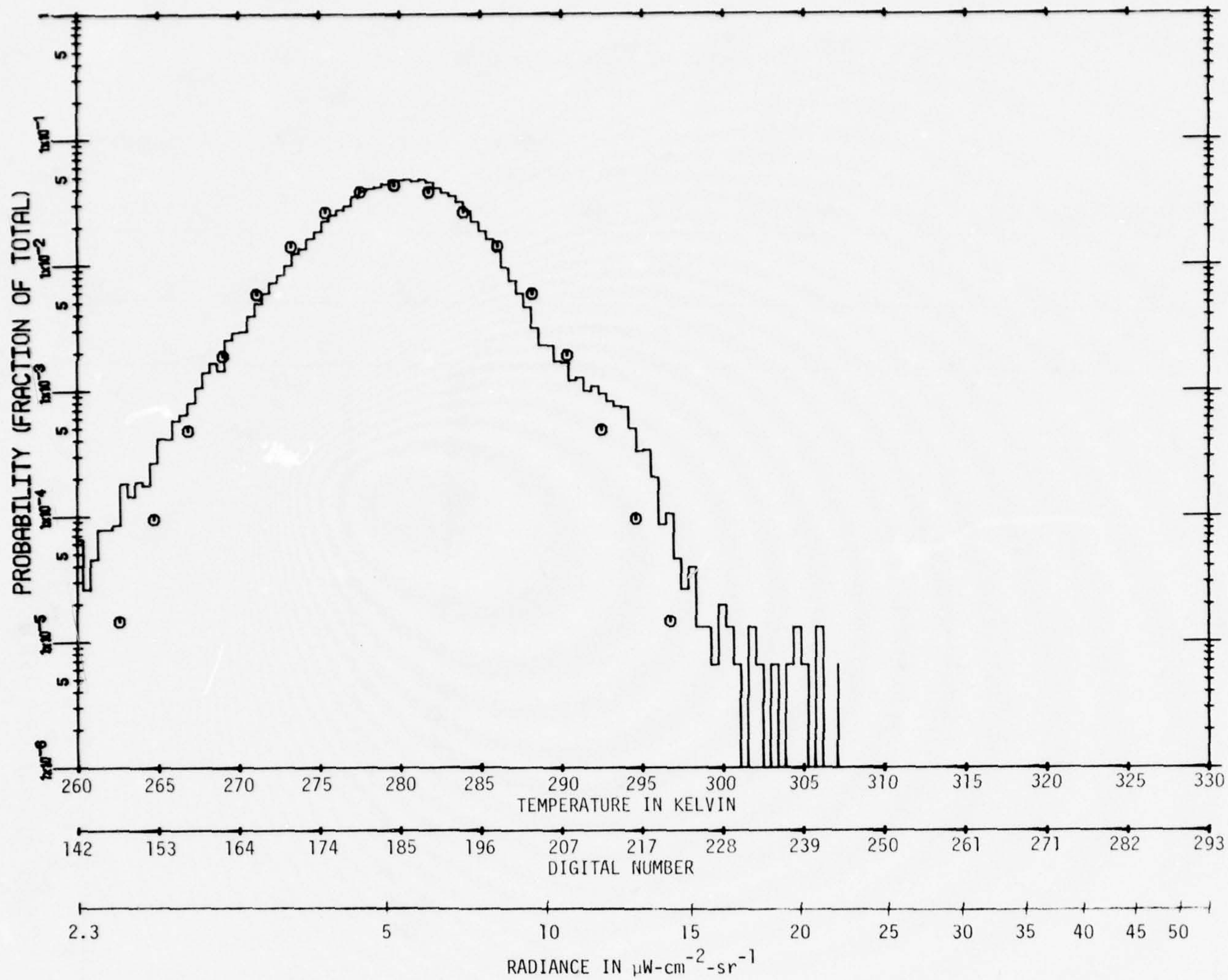
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 278.69
Std. Dev. = 0.54

FIGURE 19e. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



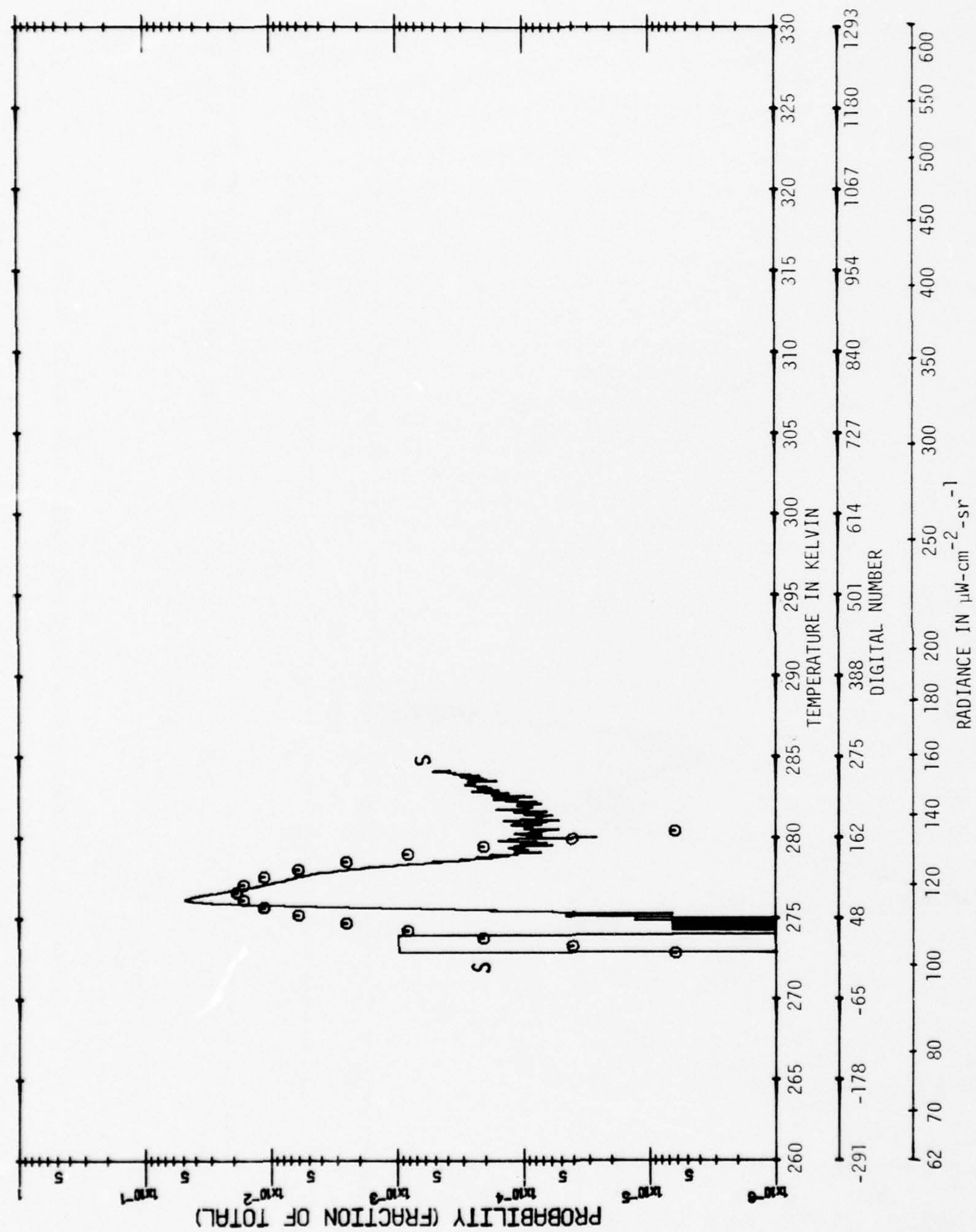
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 280.03
Std. Dev. = 0.84

FIGURE 19f. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



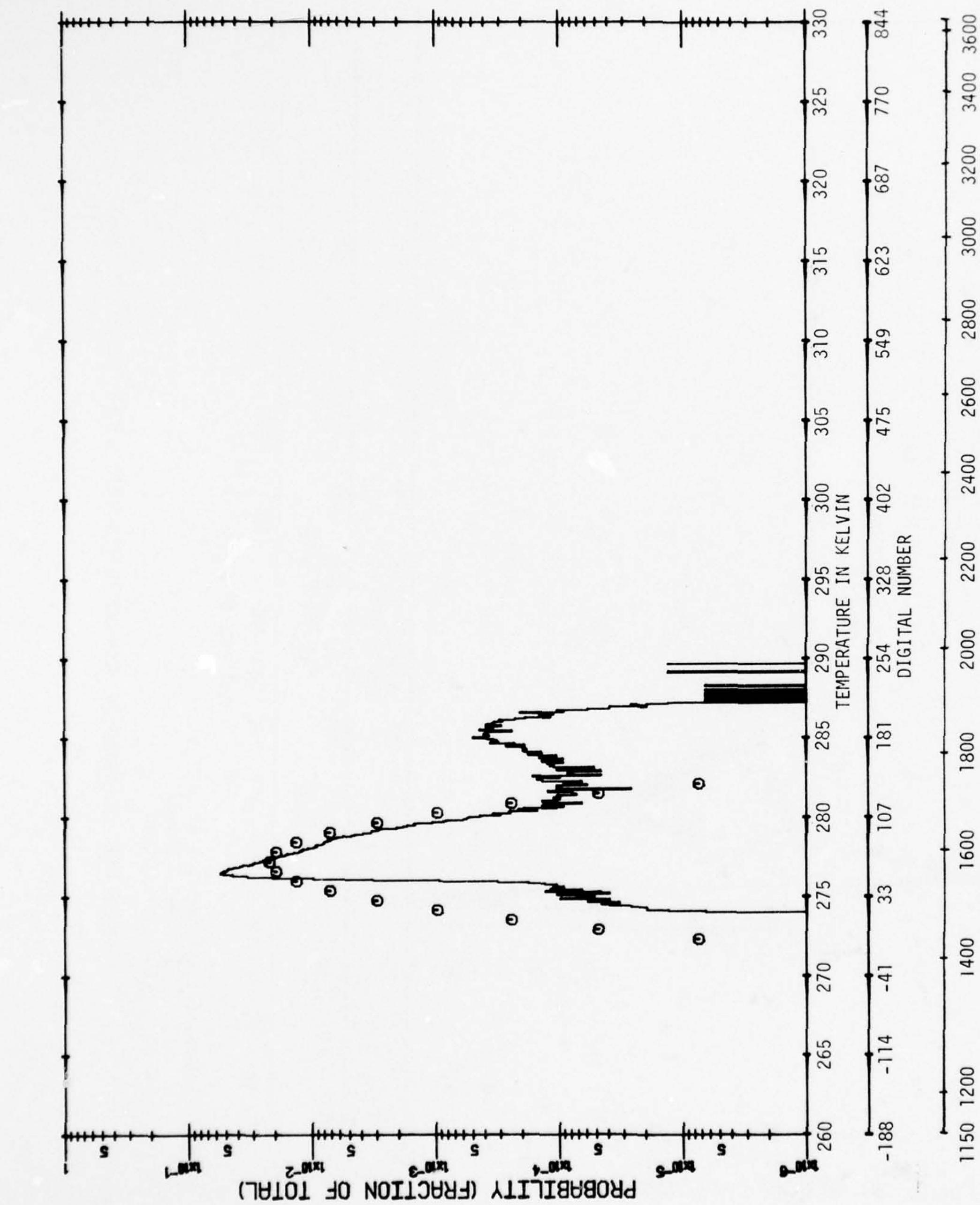
Area: FARMLAND Wavelength = 3.5 - 3.9 μm
Mean = 279.66
Std. Dev. = 4.26

FIGURE 20a. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



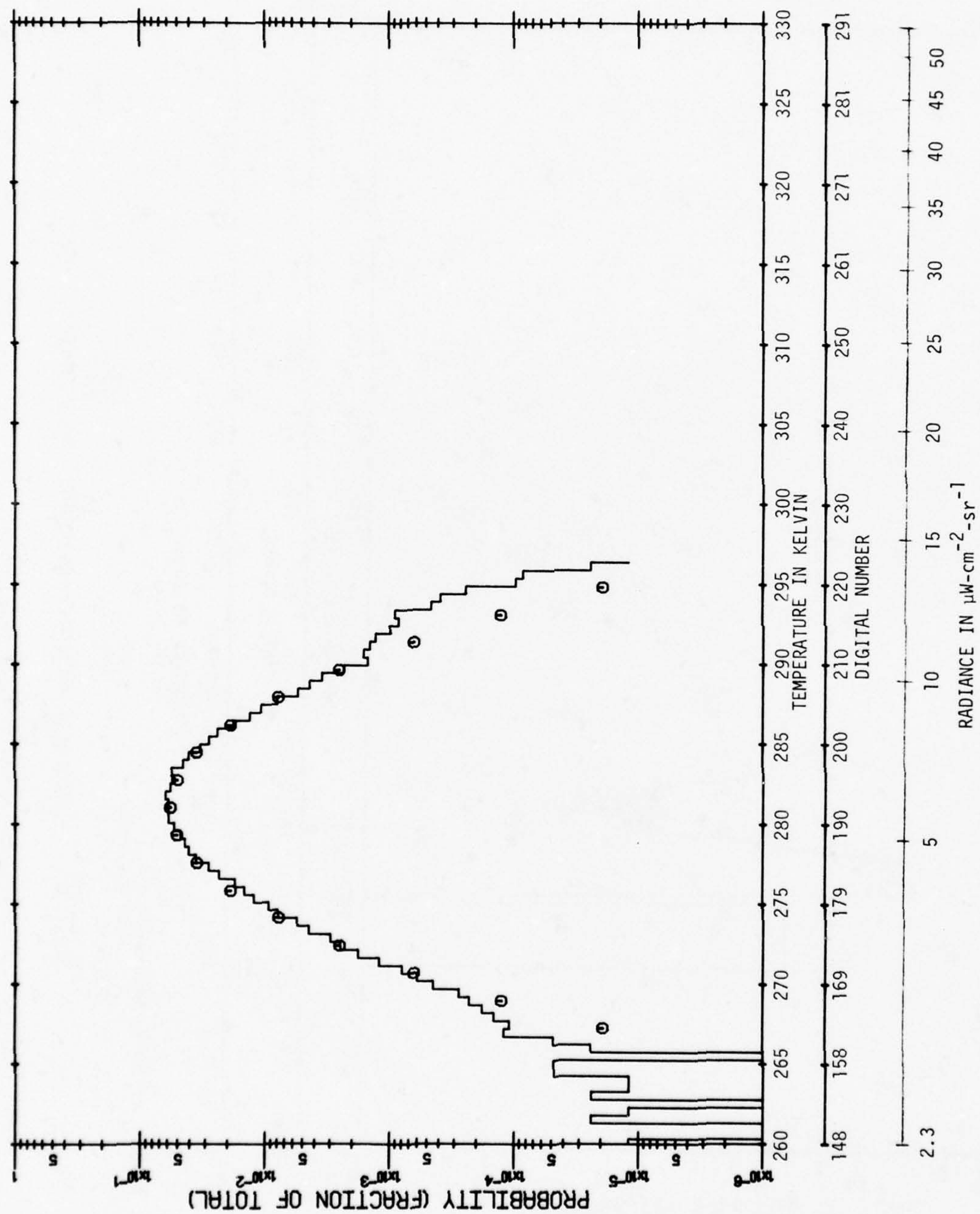
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 276.62
Std. Dev. = 0.95

FIGURE 20b. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



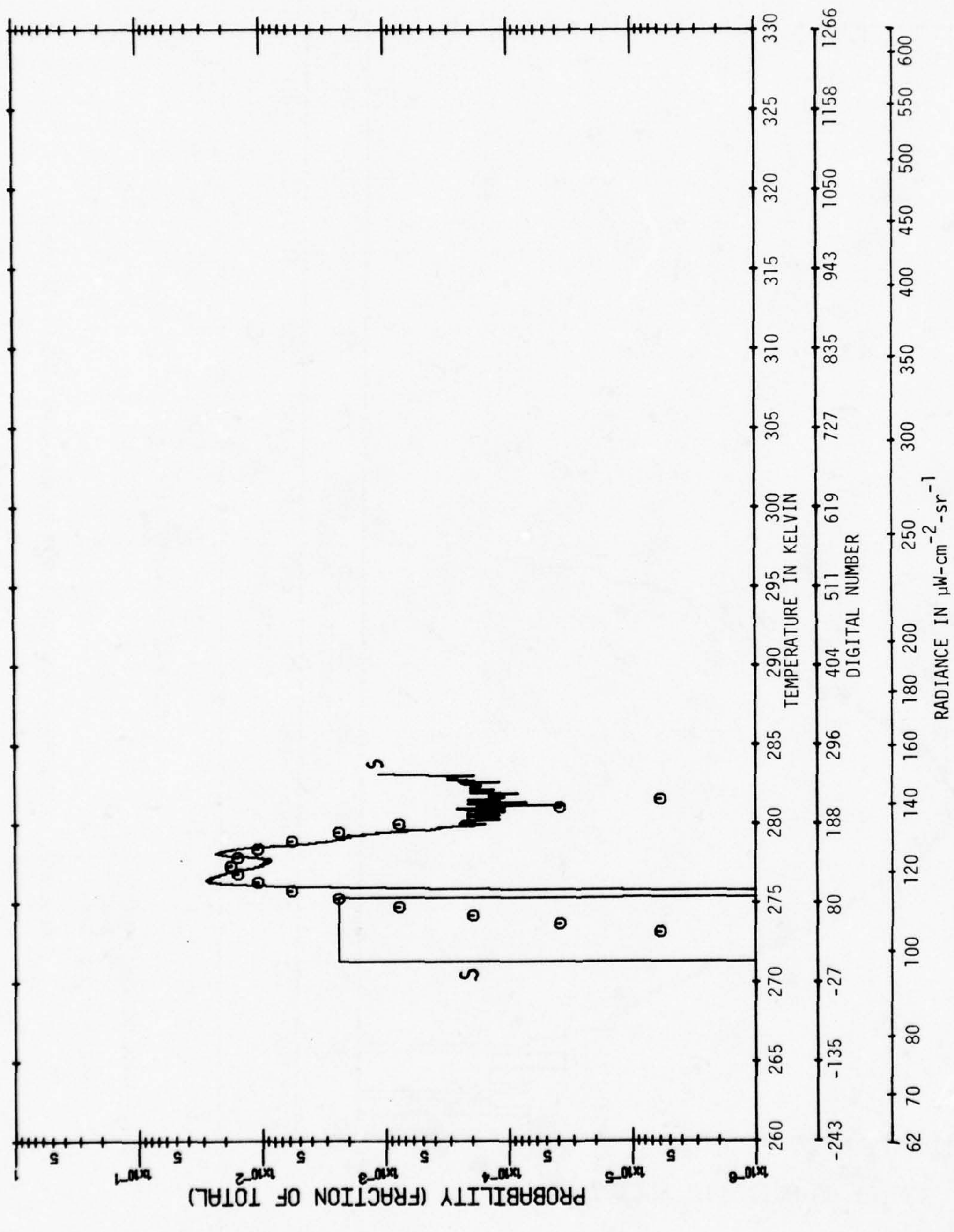
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 277.23
Std. Dev. = 1.23

FIGURE 20c. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 90 DEG.)



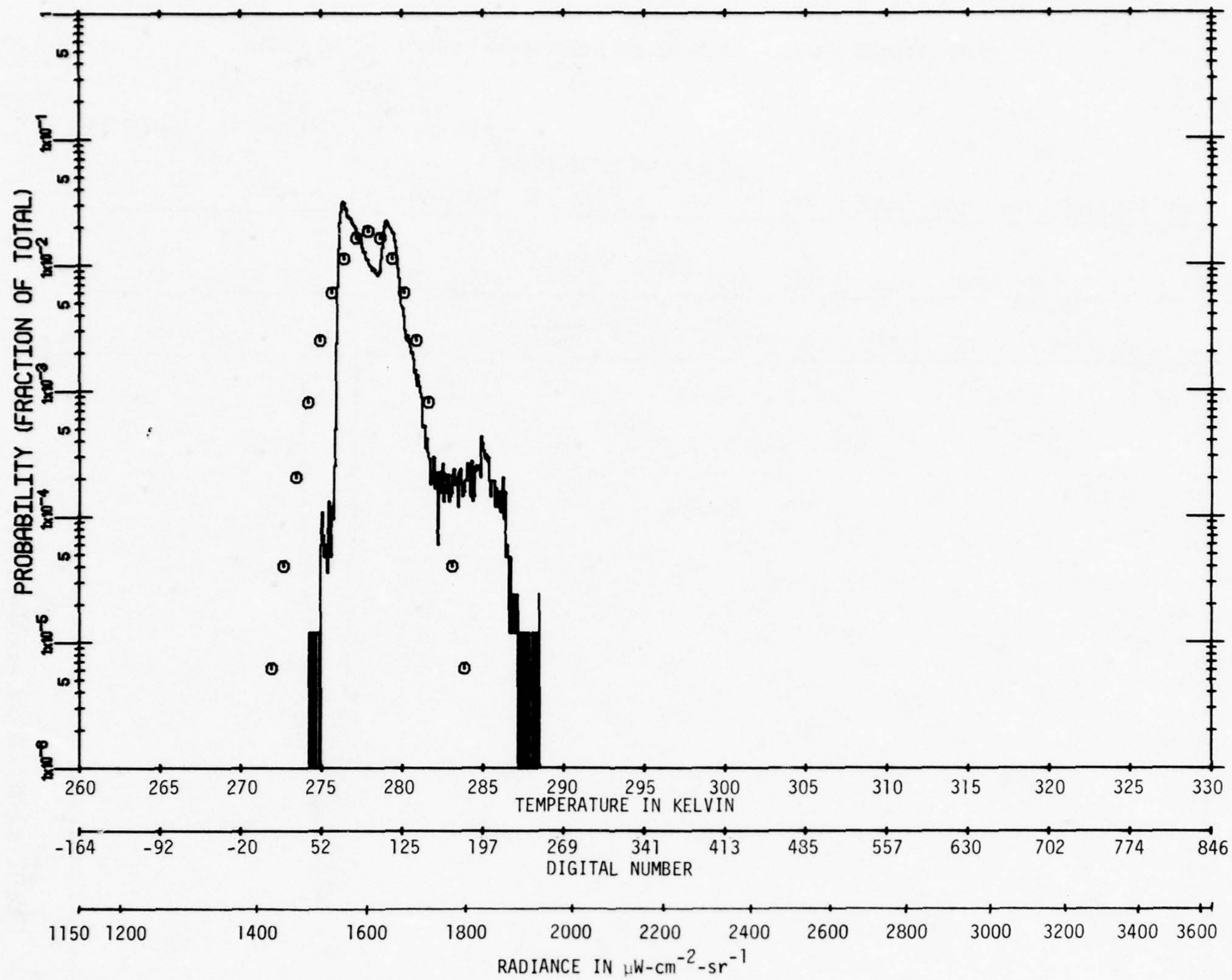
Area: FARMLAND Wavelength = 3.5 - 3.9 μm
Mean = 281.04
Std. Dev. = 3.45

FIGURE 20d. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



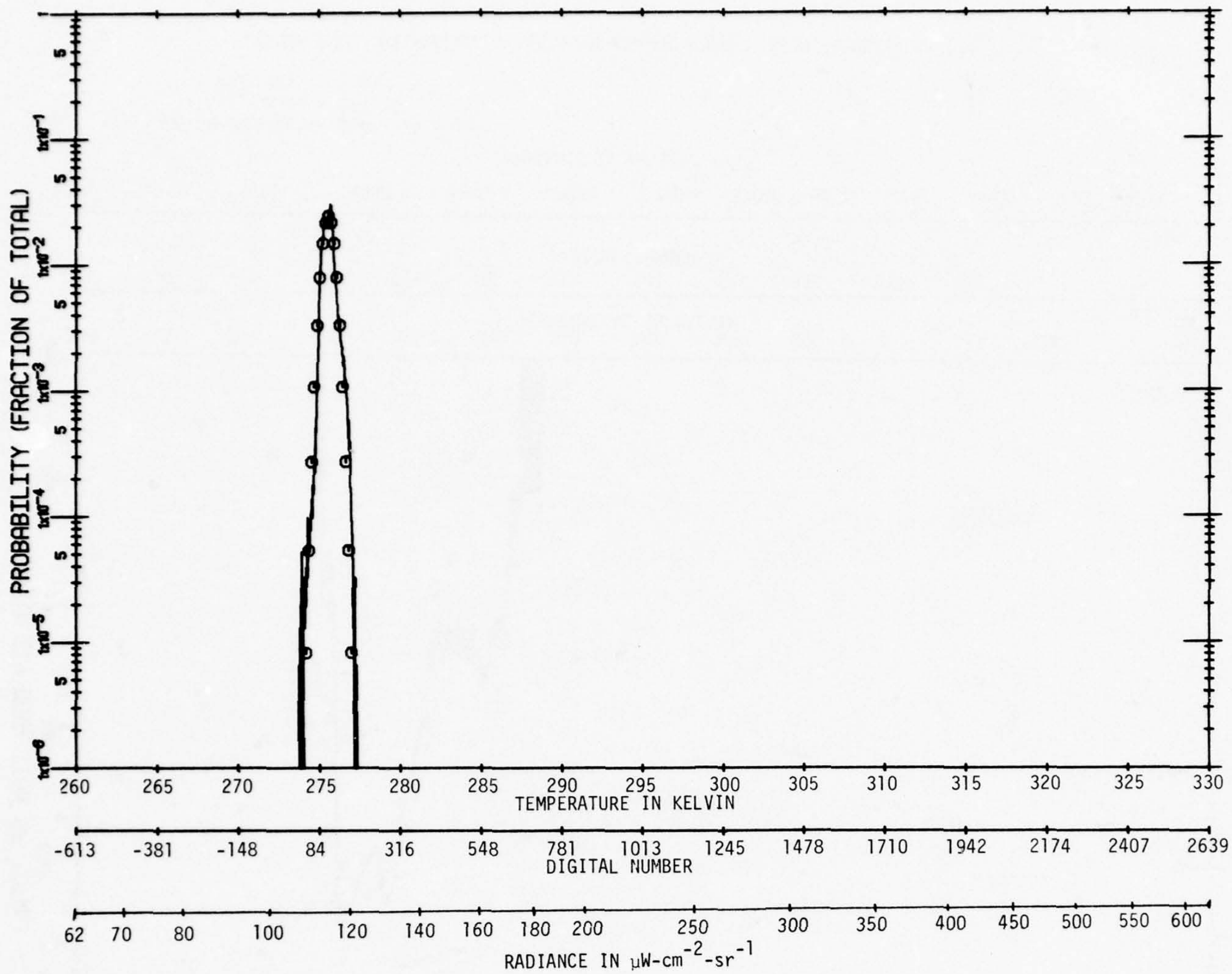
Area: FARMLAND Wavelength = 4.5 - 5.5 µm
Mean = 277.36
Std. Dev. = 1.05

FIGURE 20e. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



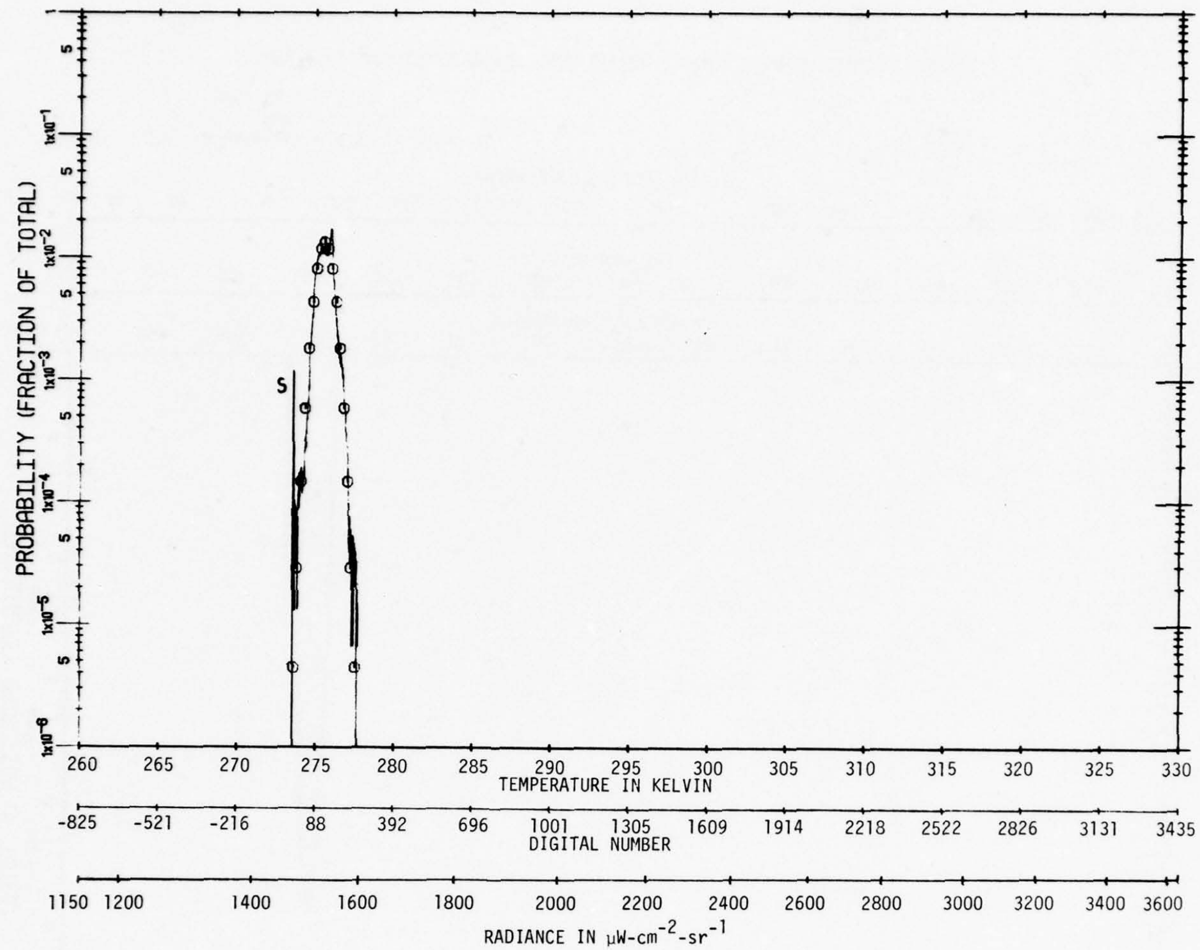
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 277.91
Std. Dev. = 1.49

FIGURE 20f. HISTOGRAM OF MICHIGAN WINTER SCENE - NOON (ANGLE: 35 DEG.)



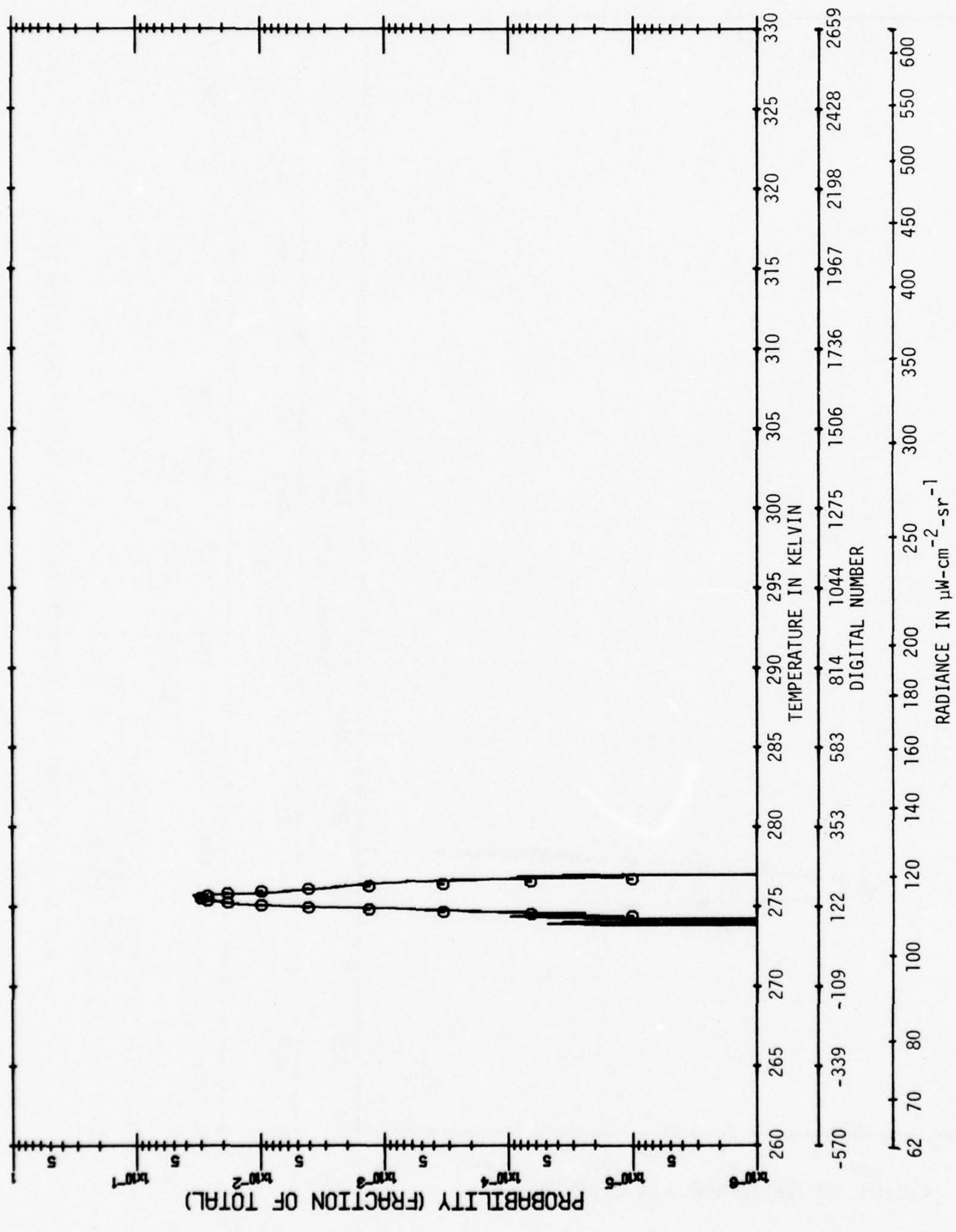
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.60
Std. Dev. = 0.35

FIGURE 21a. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



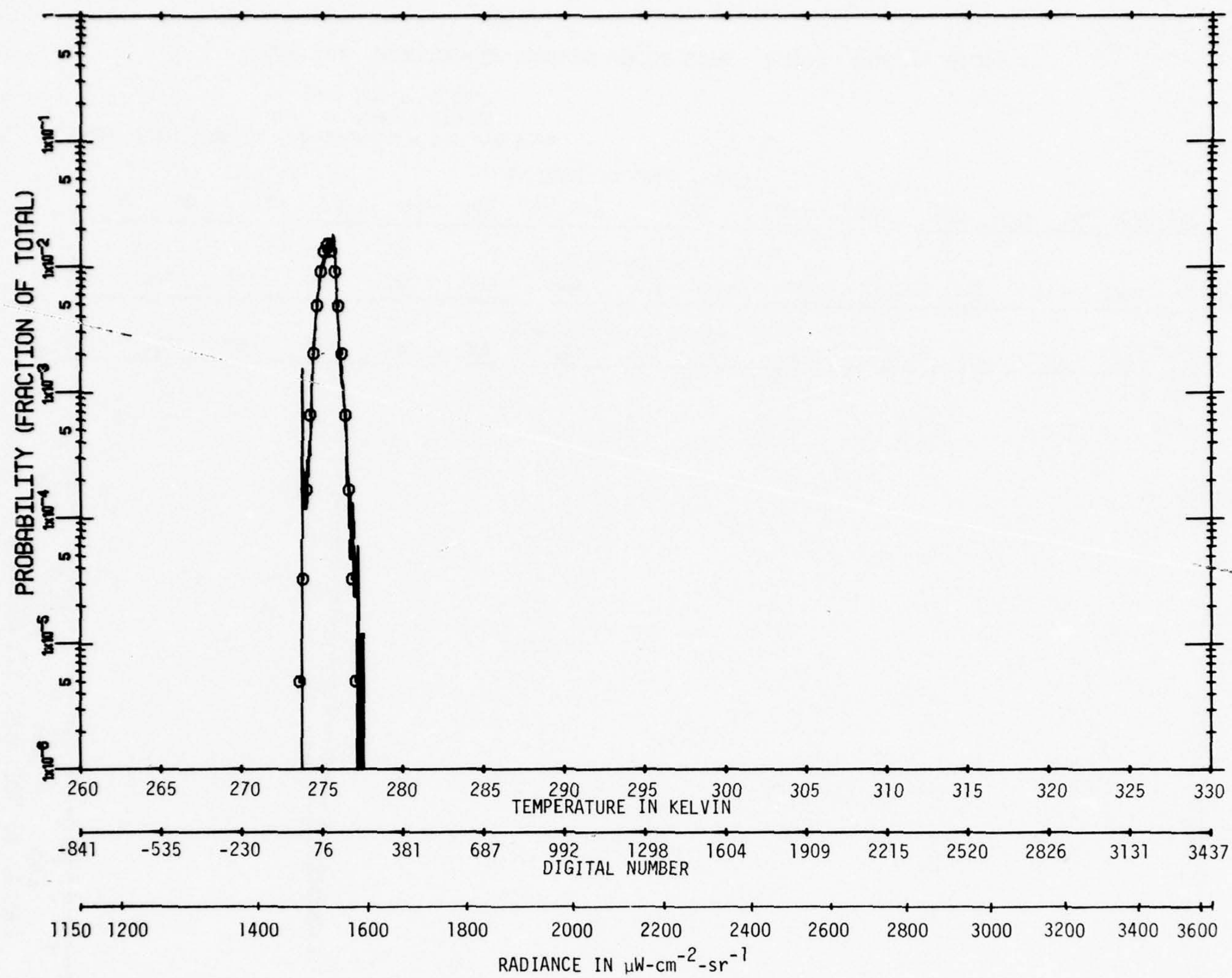
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 275.59
Std. Dev. = 0.49

FIGURE 21b. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



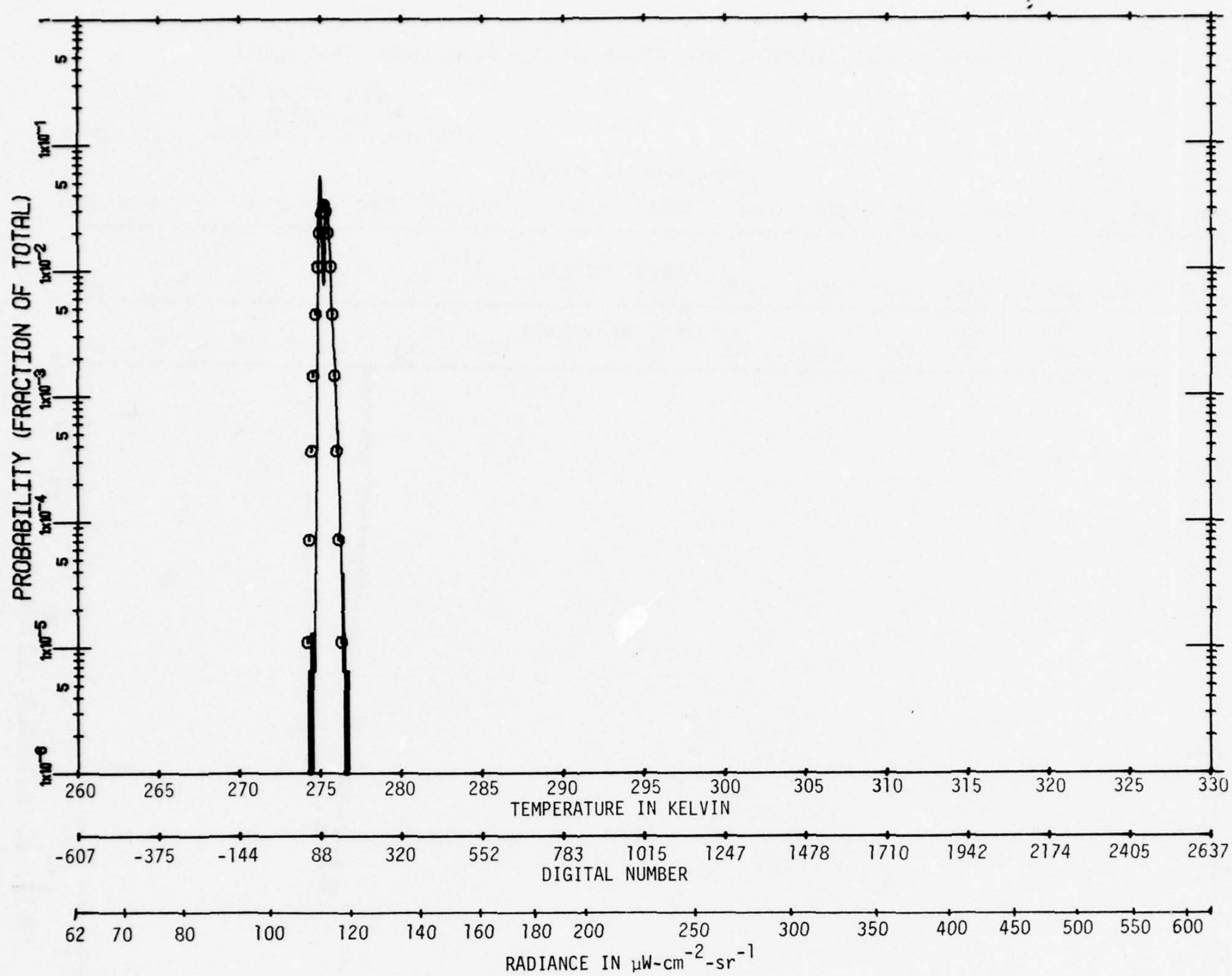
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.56
Std. Dev. = 0.29

FIGURE 21c. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



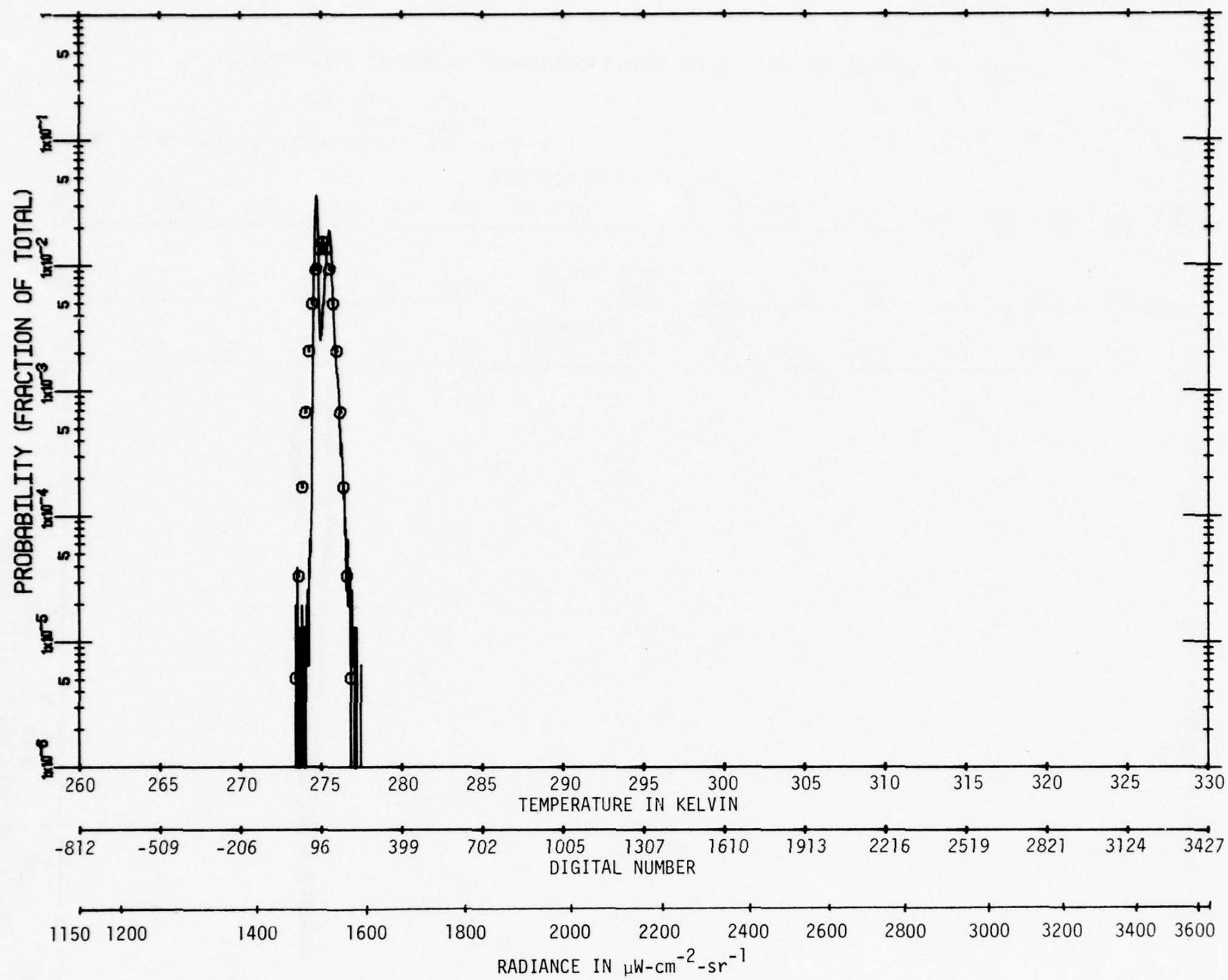
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 275.36
Std. Dev. = 0.44

FIGURE 21d. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



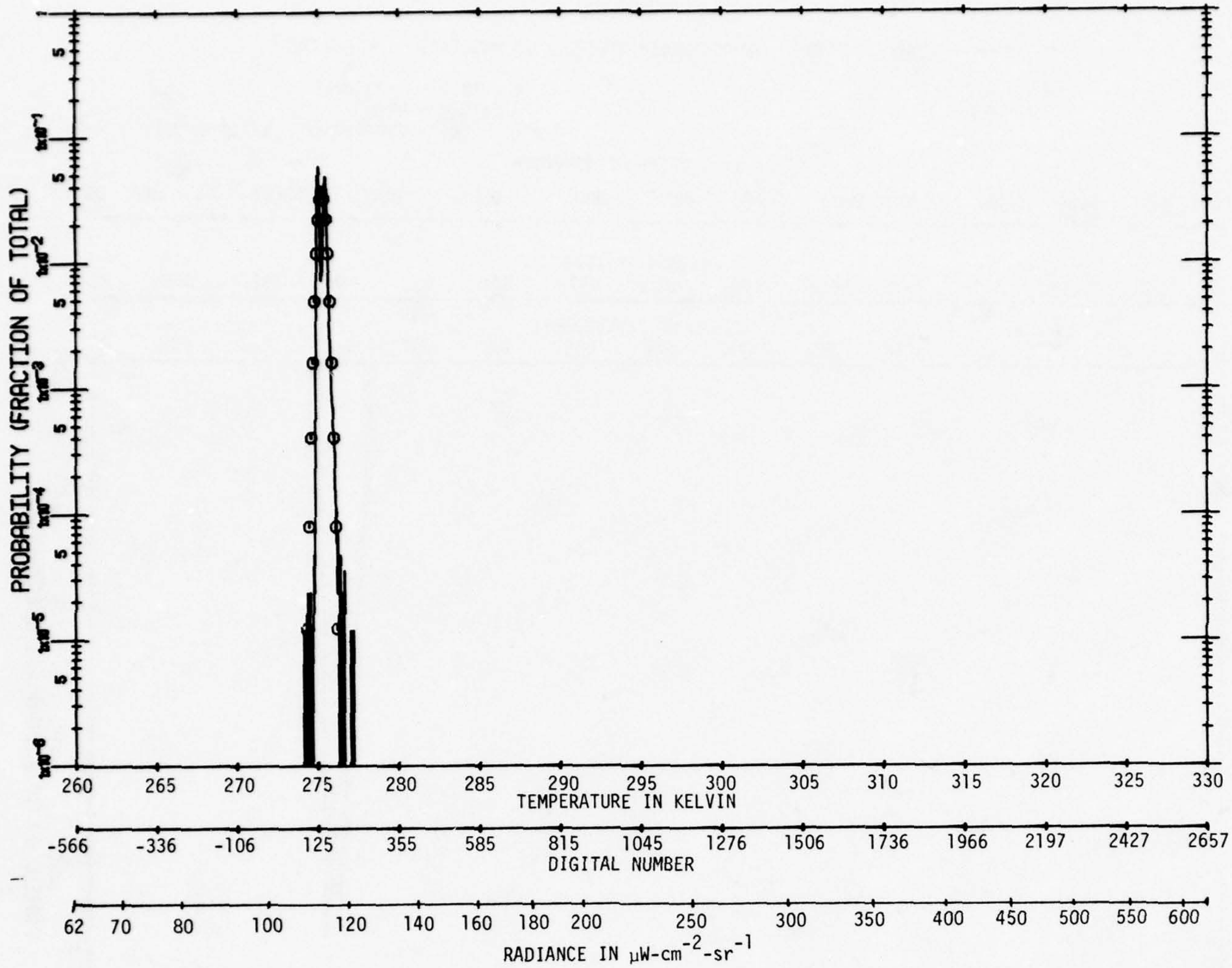
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 275.25
Std. Dev. = 0.26

FIGURE 22a. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



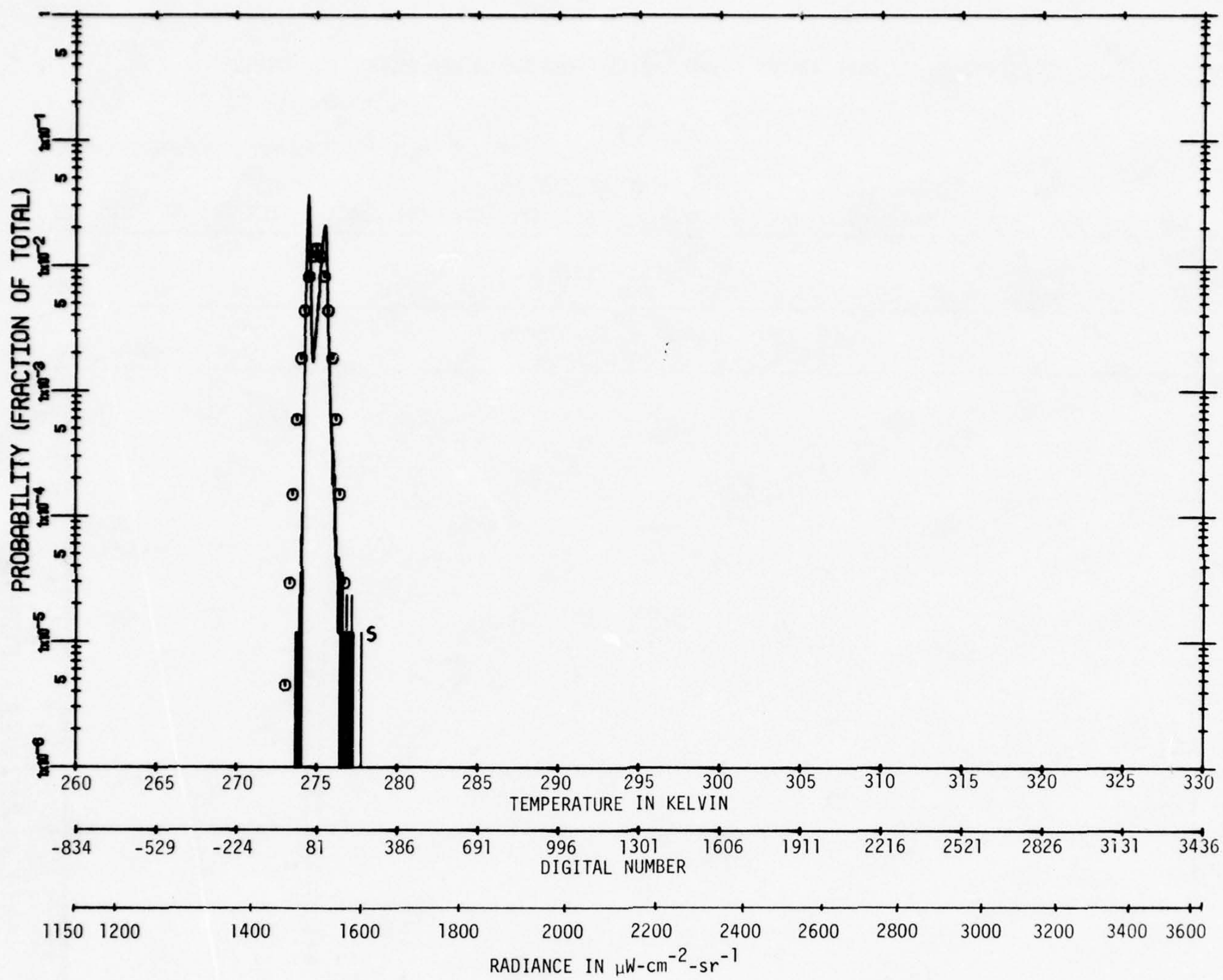
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 275.12
Std. Dev. = 0.43

FIGURE 22b. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



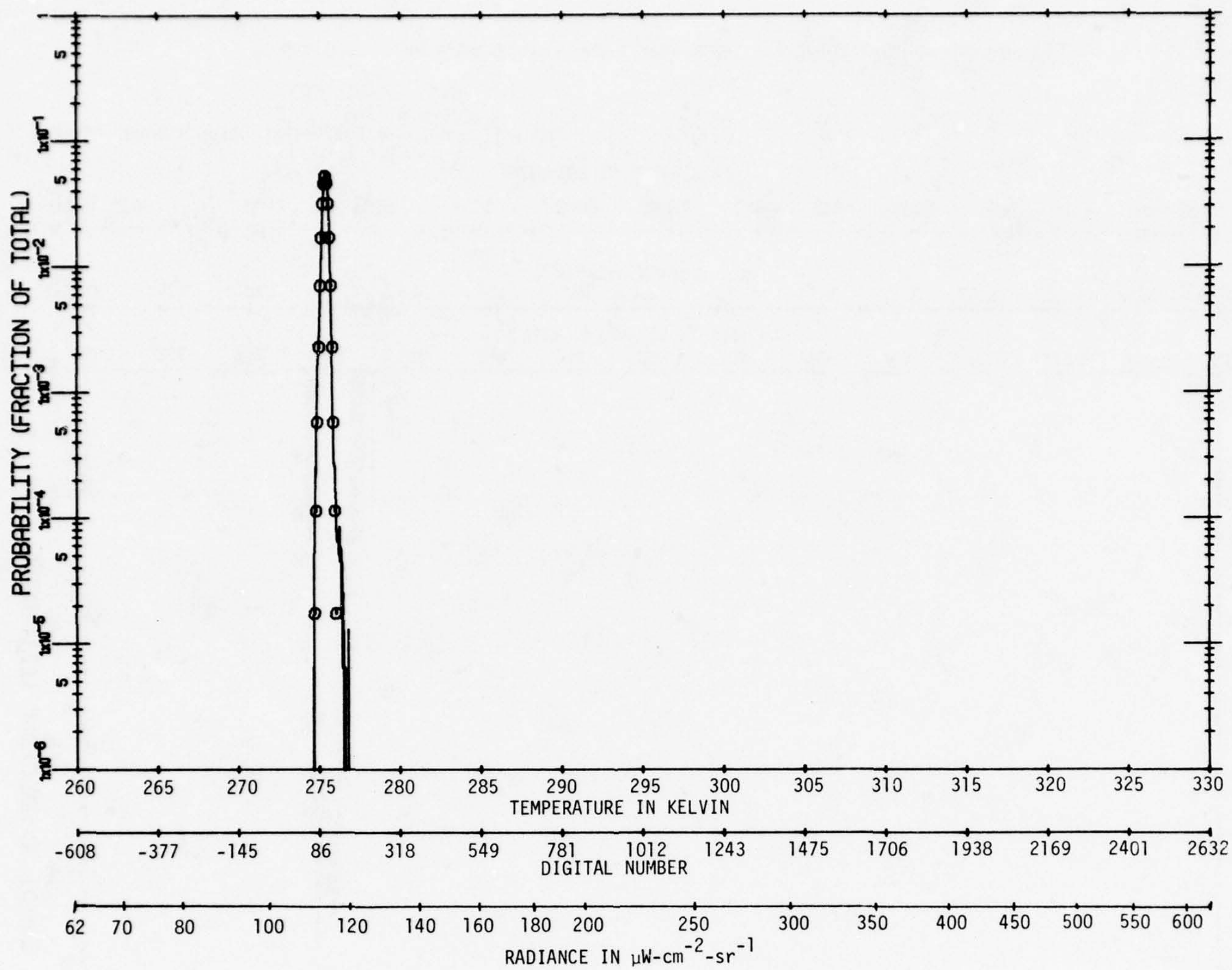
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 275.29
Std. Dev. = 0.24

FIGURE 22c. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



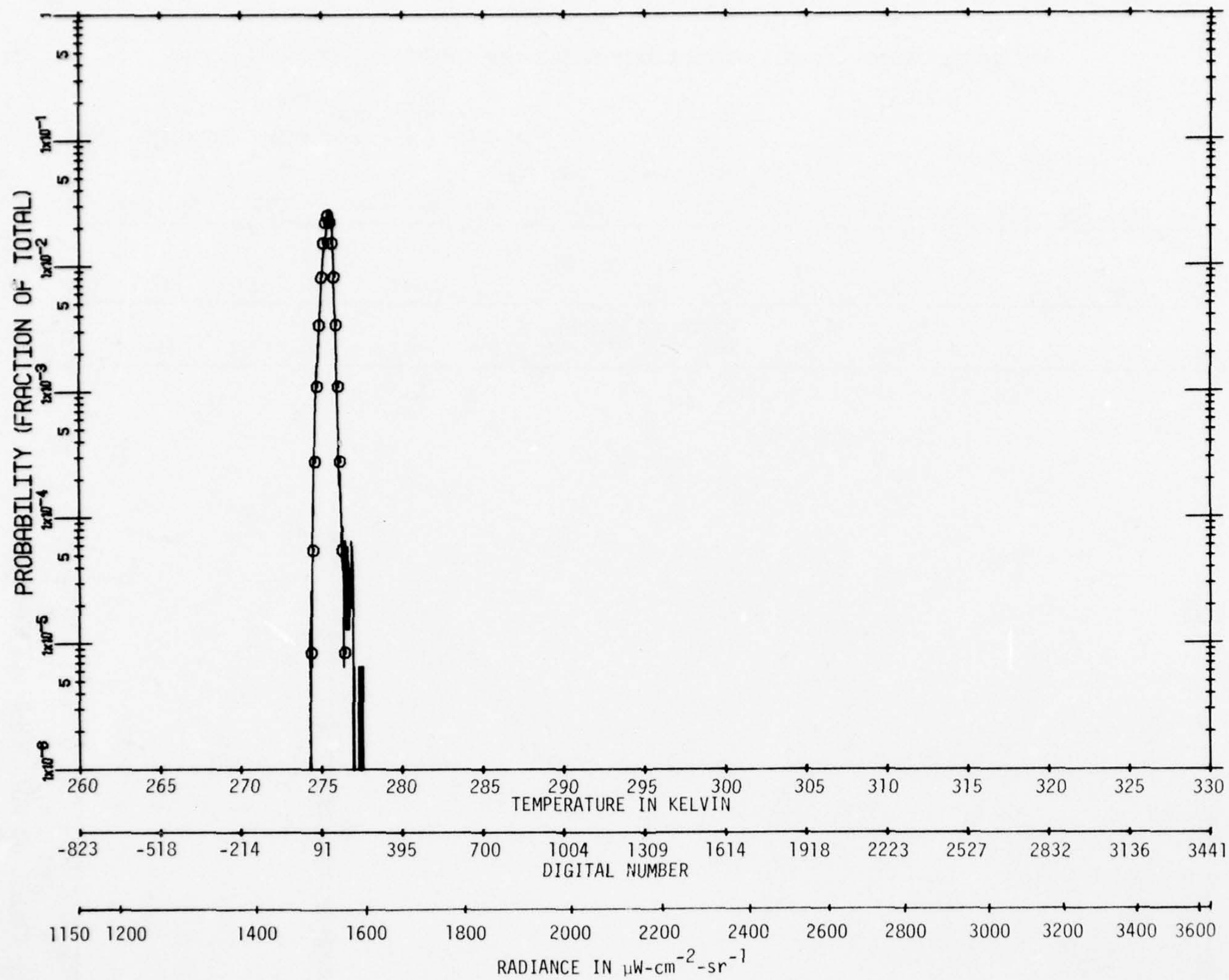
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 274.97
Std. Dev. = 0.49

FIGURE 22d. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



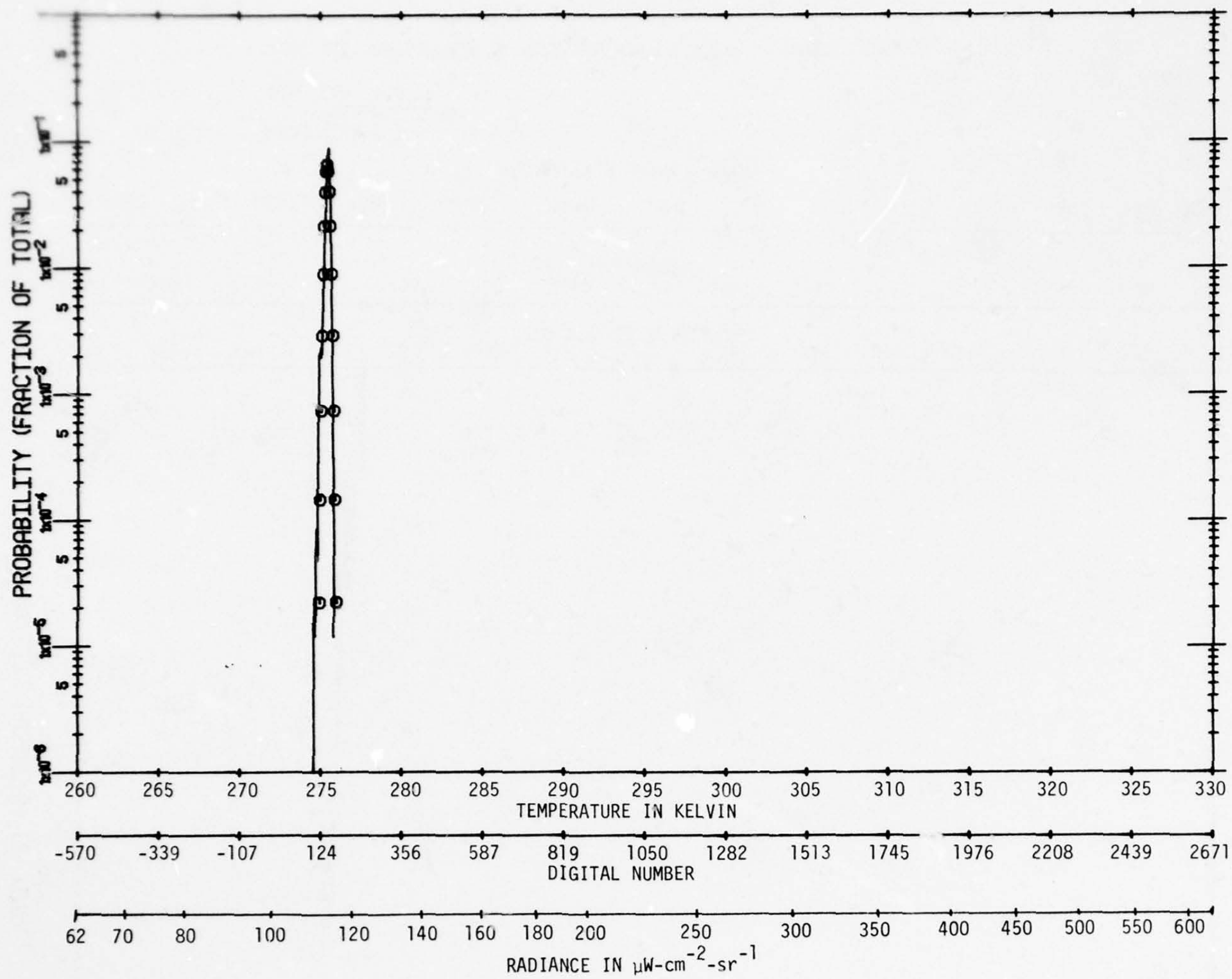
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 275.40
Std. Dev. = 0.17

FIGURE 23a. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



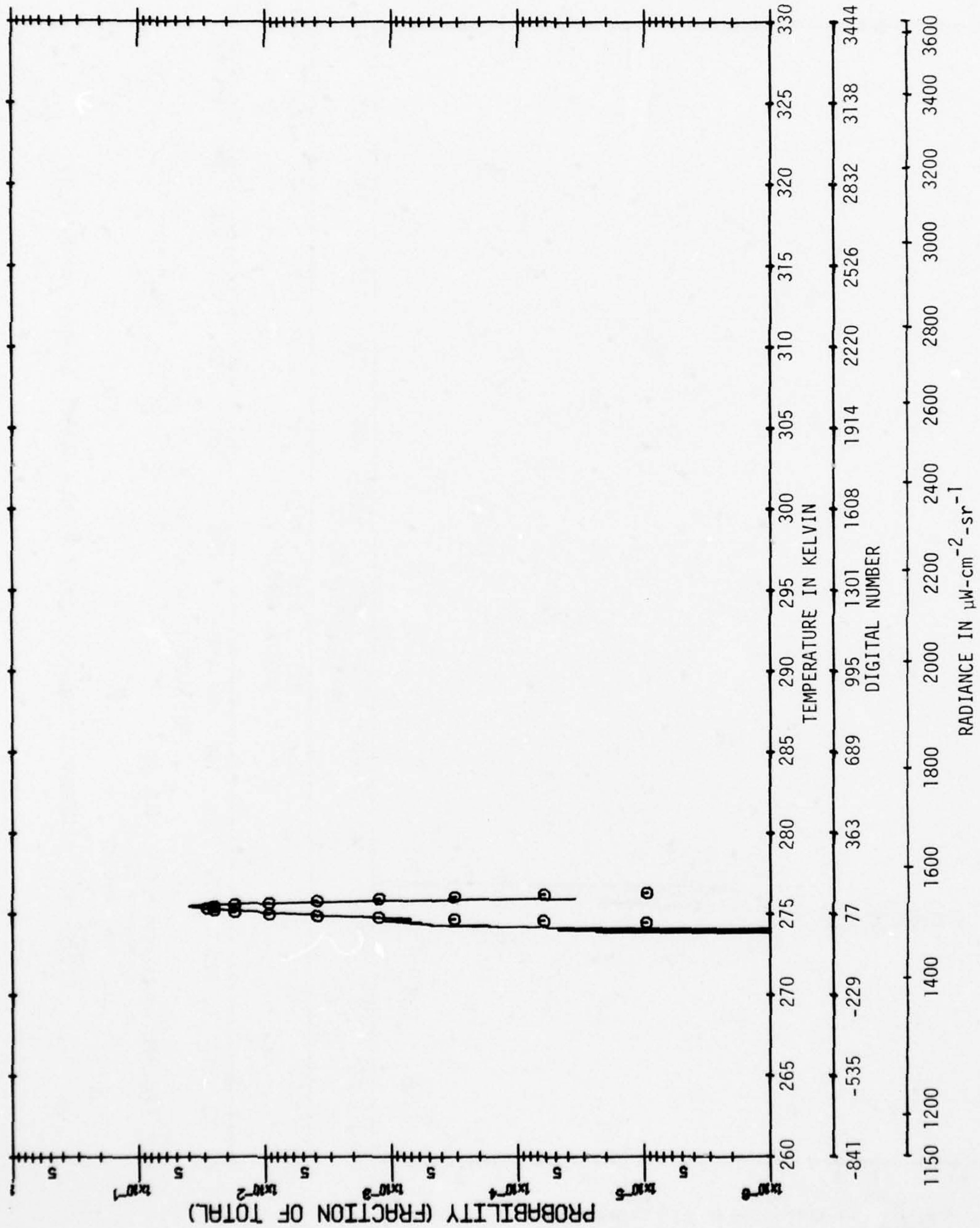
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 275.44
Std. Dev. = 0.26

FIGURE 23b. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



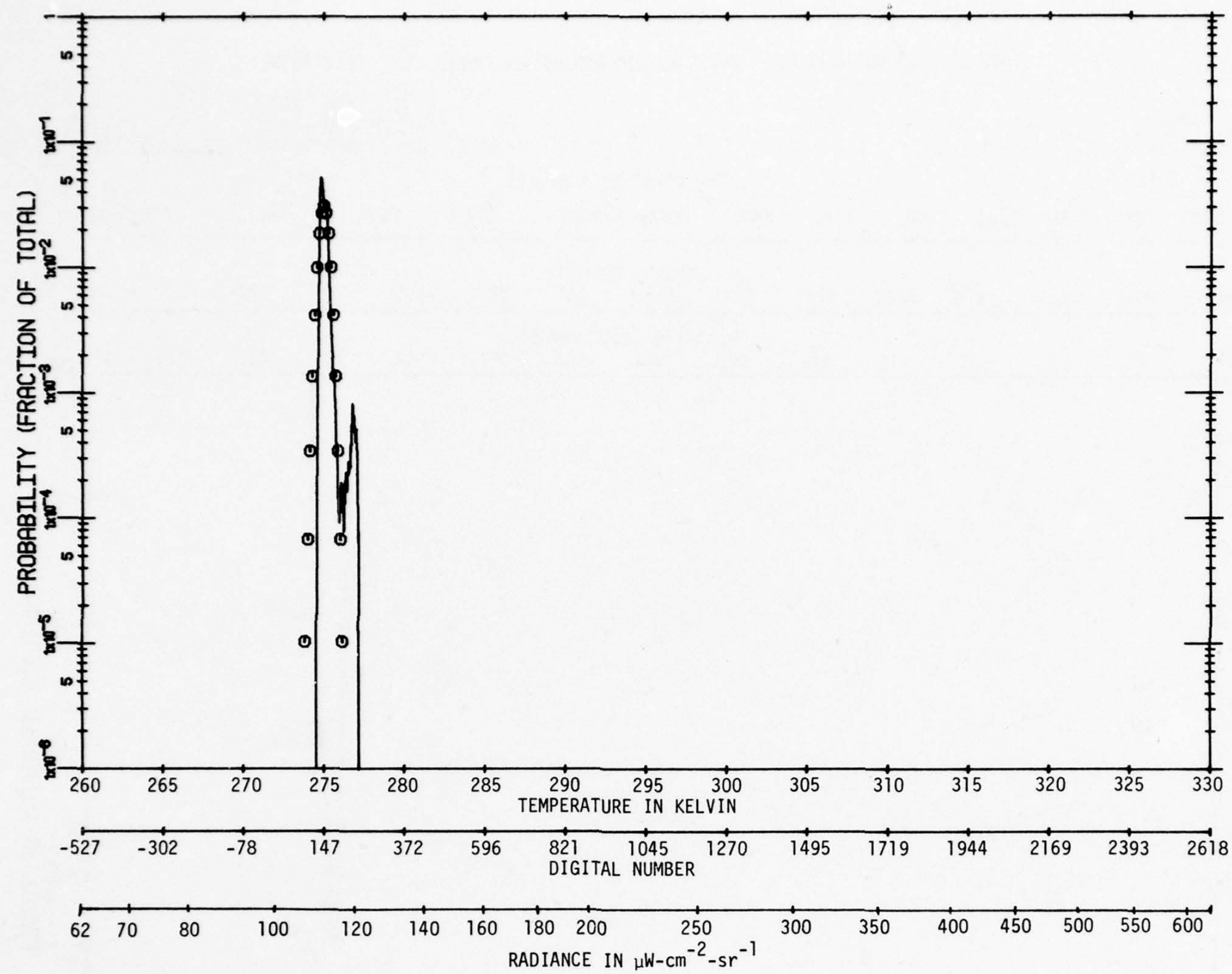
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 275.43
Std. Dev. = 0.13

FIGURE 23c. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



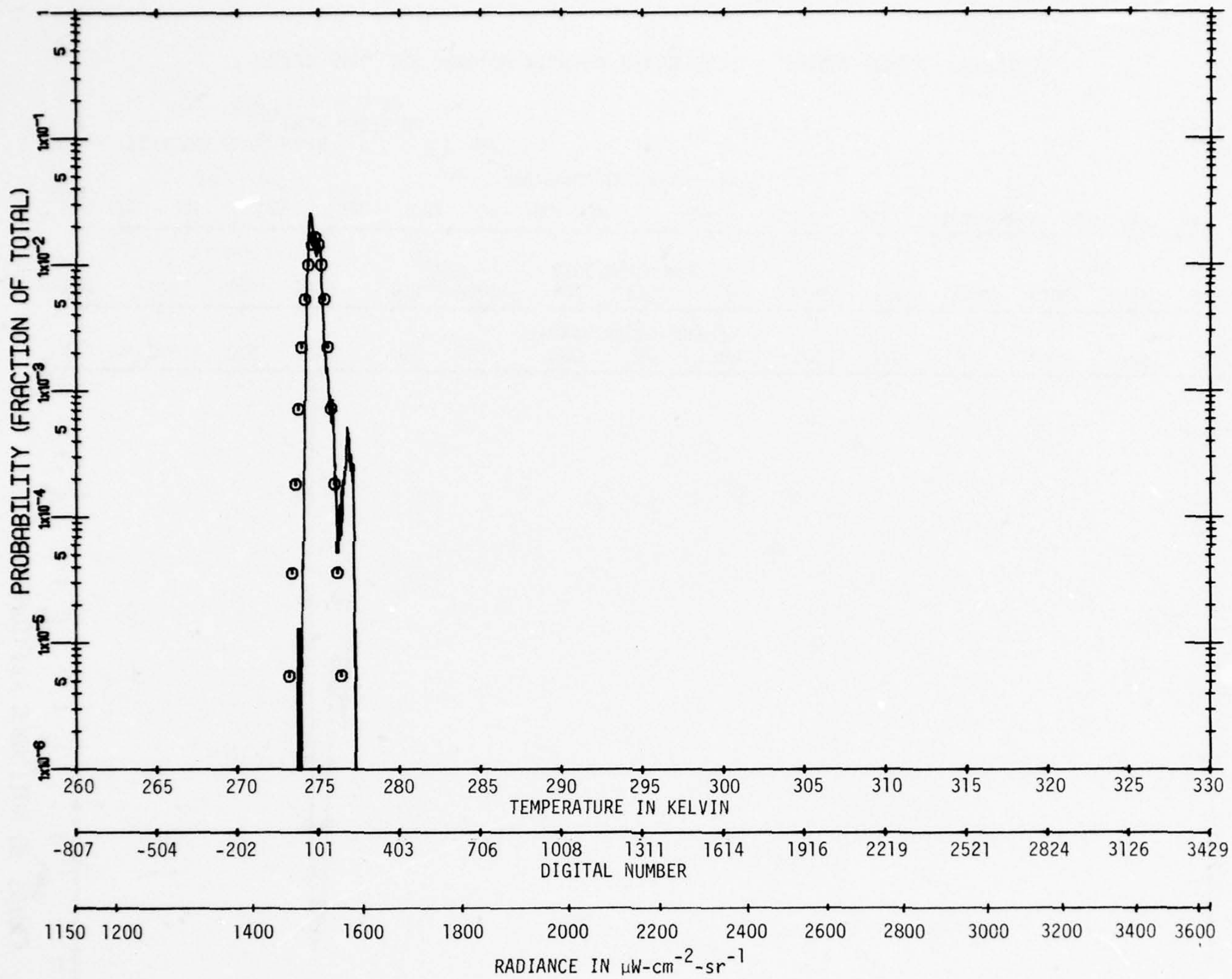
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 275.37
Std. Dev. = 0.23

FIGURE 23d. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



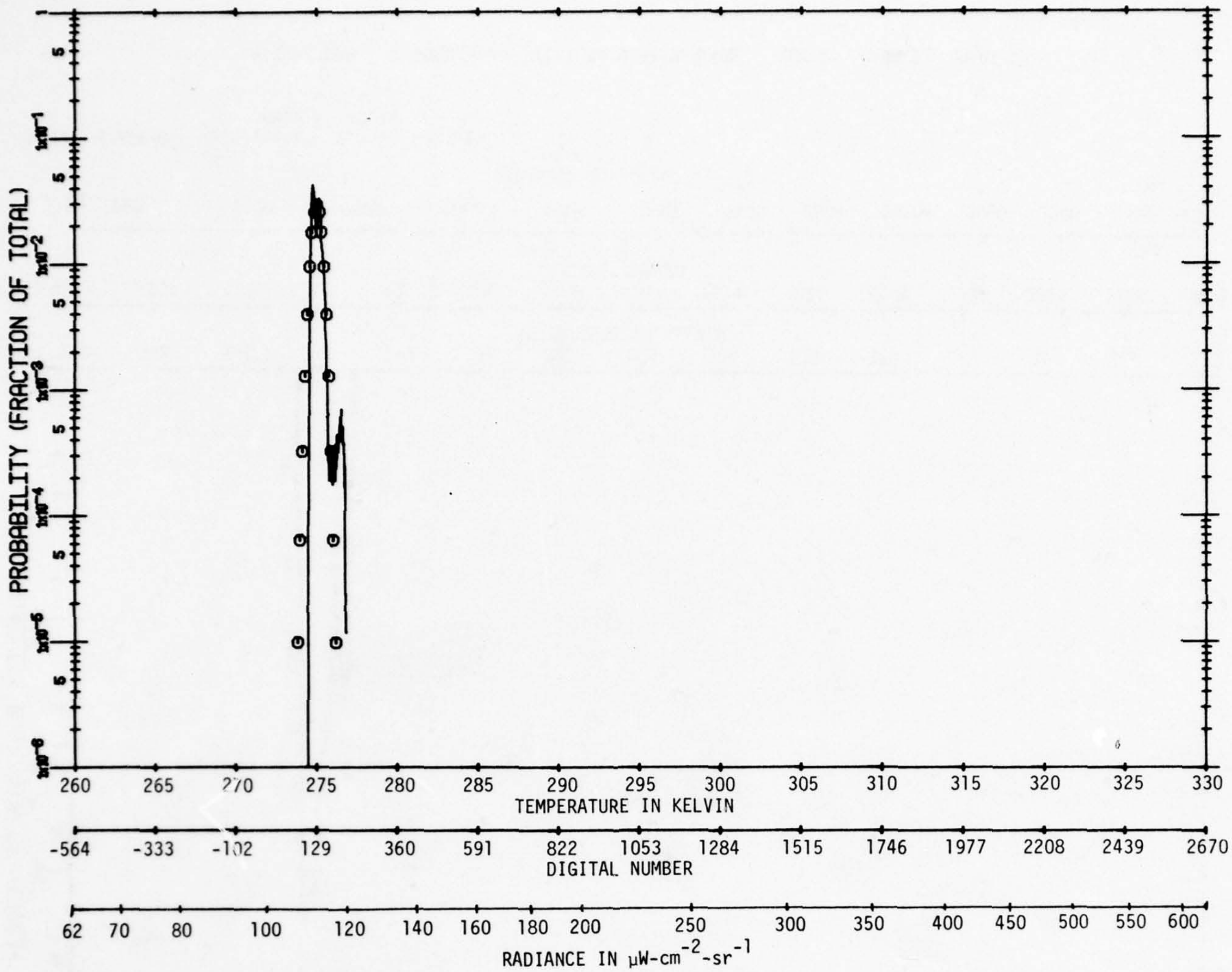
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 275.01
Std. Dev. = 0.29

FIGURE 24a. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



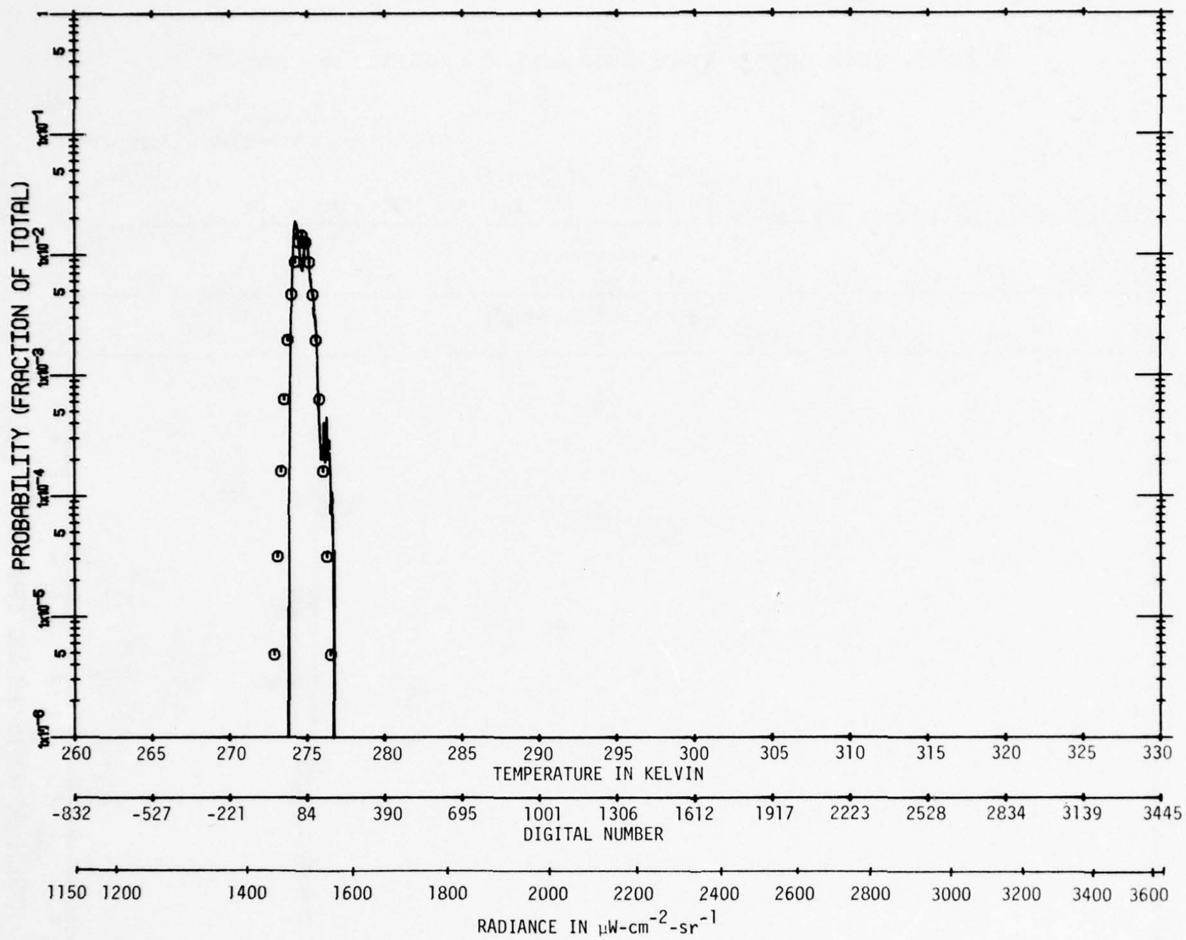
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.79
Std. Dev. = 0.40

FIGURE 24b. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 90 DEG.)



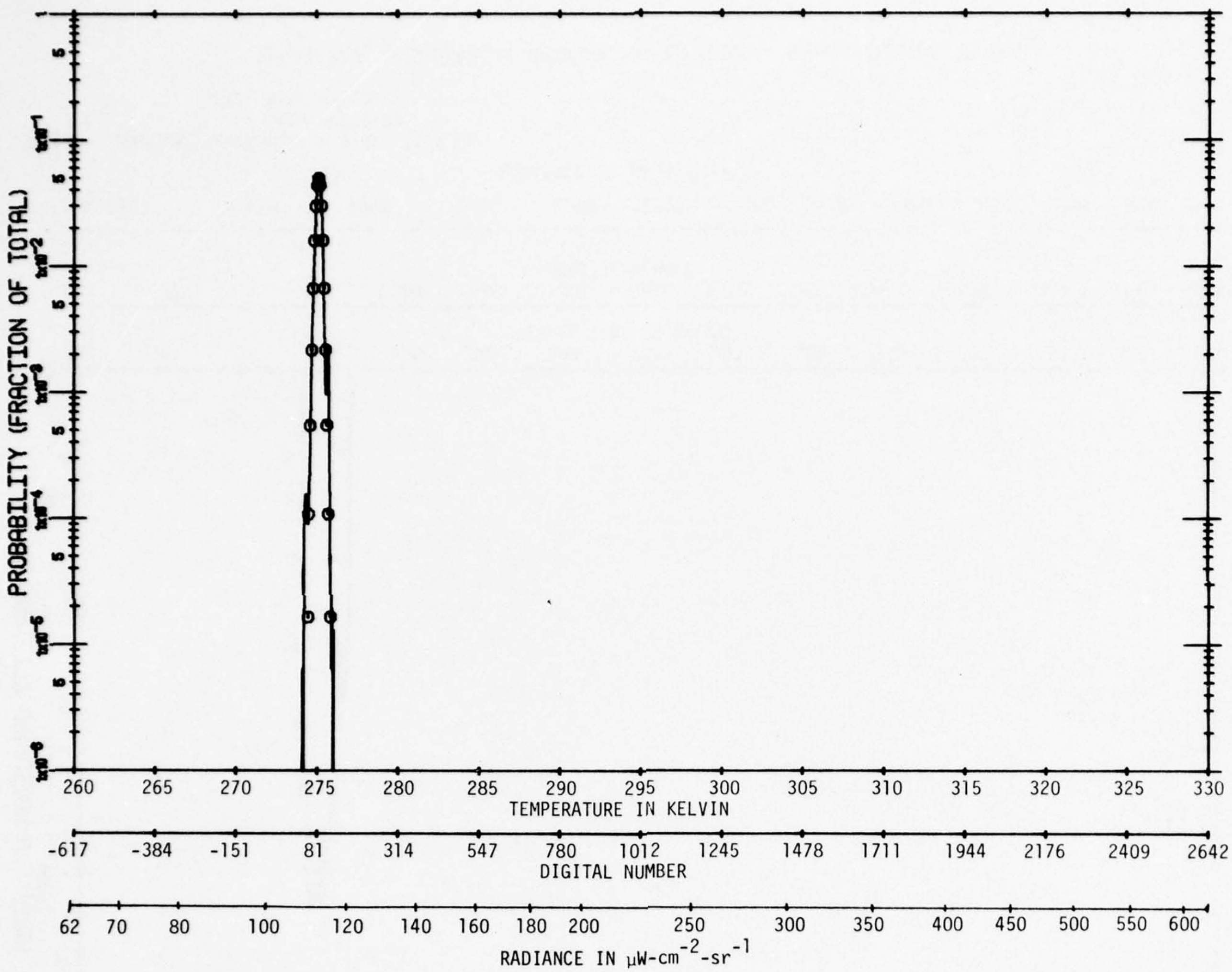
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 275.02
Std. Dev. = 0.30

FIGURE 24c. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



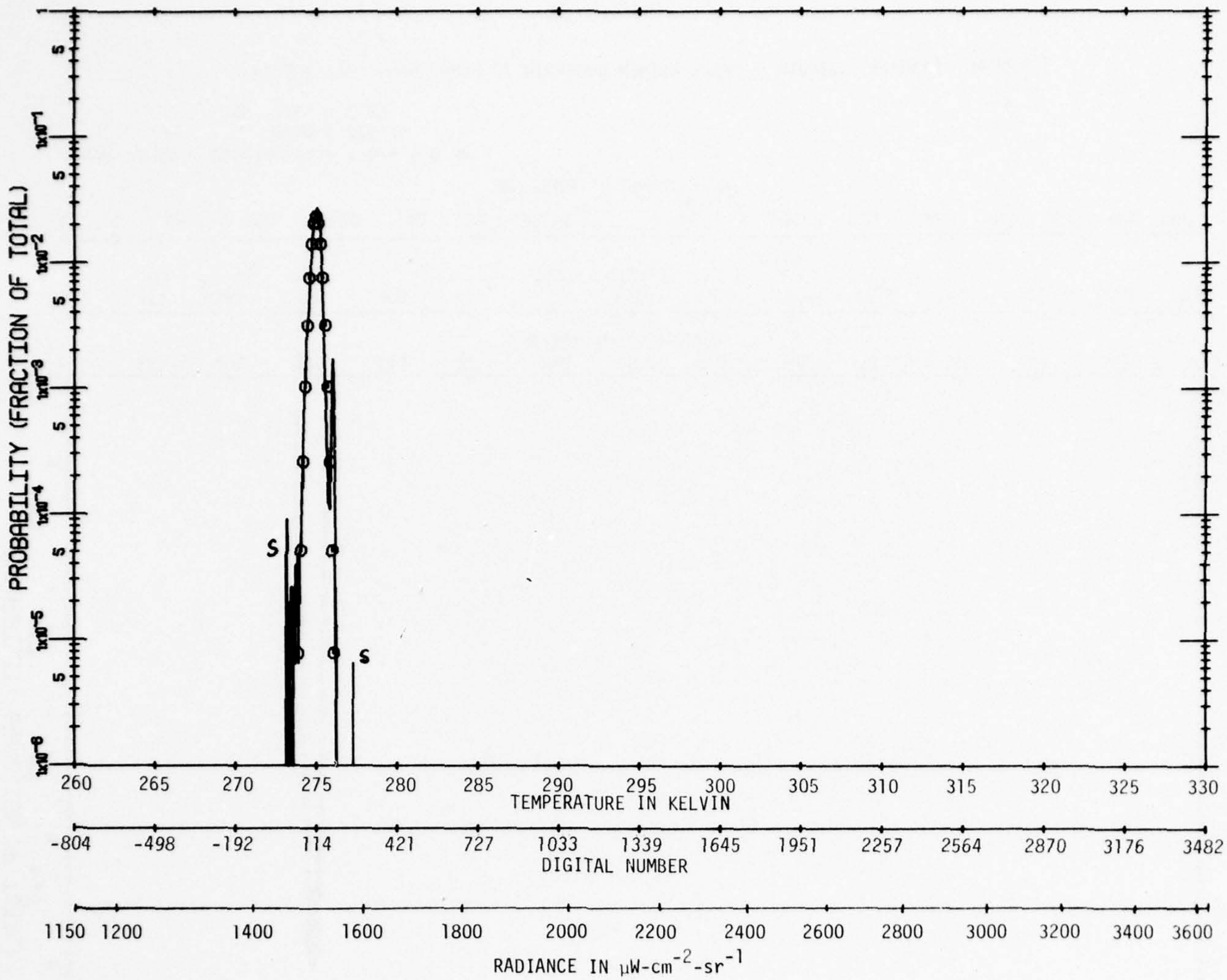
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.70
Std. Dev. = 0.46

FIGURE 24d. HISTOGRAM OF MICHIGAN WINTER SCENE - SUNSET (ANGLE: 35 DEG.)



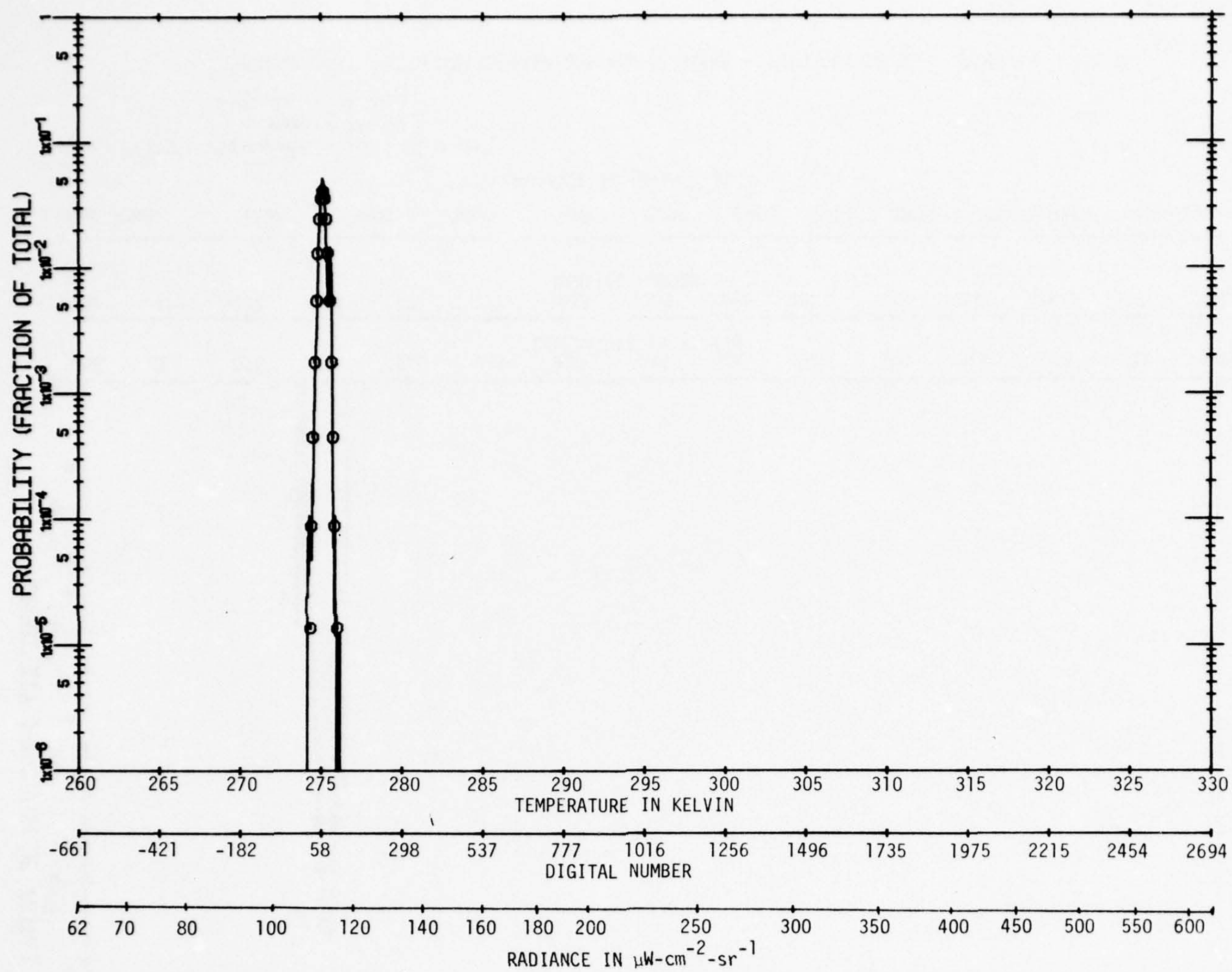
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.14
Std. Dev. = 0.17

FIGURE 25a. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



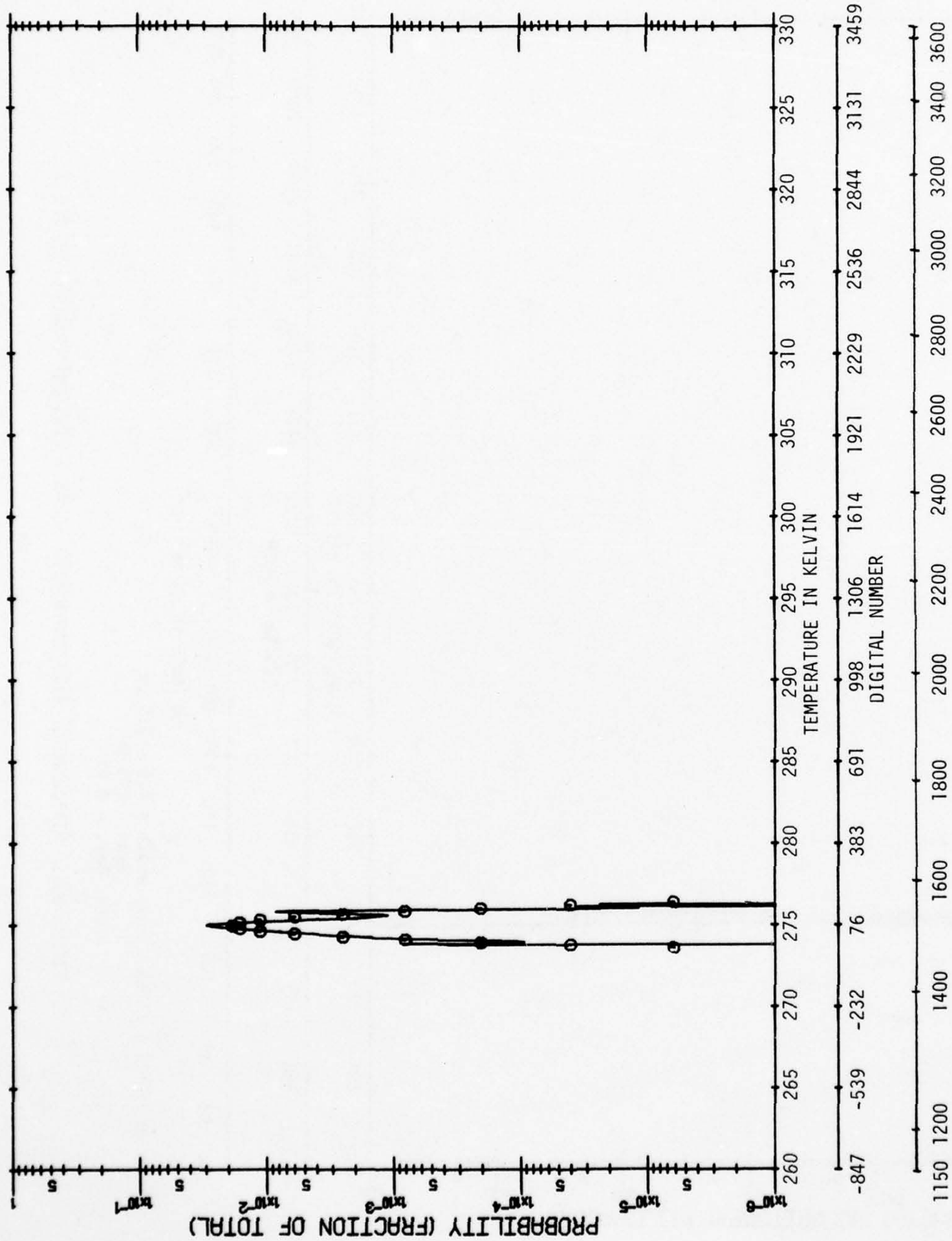
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 275.00
Std. Dev. = 0.28

FIGURE 25b. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



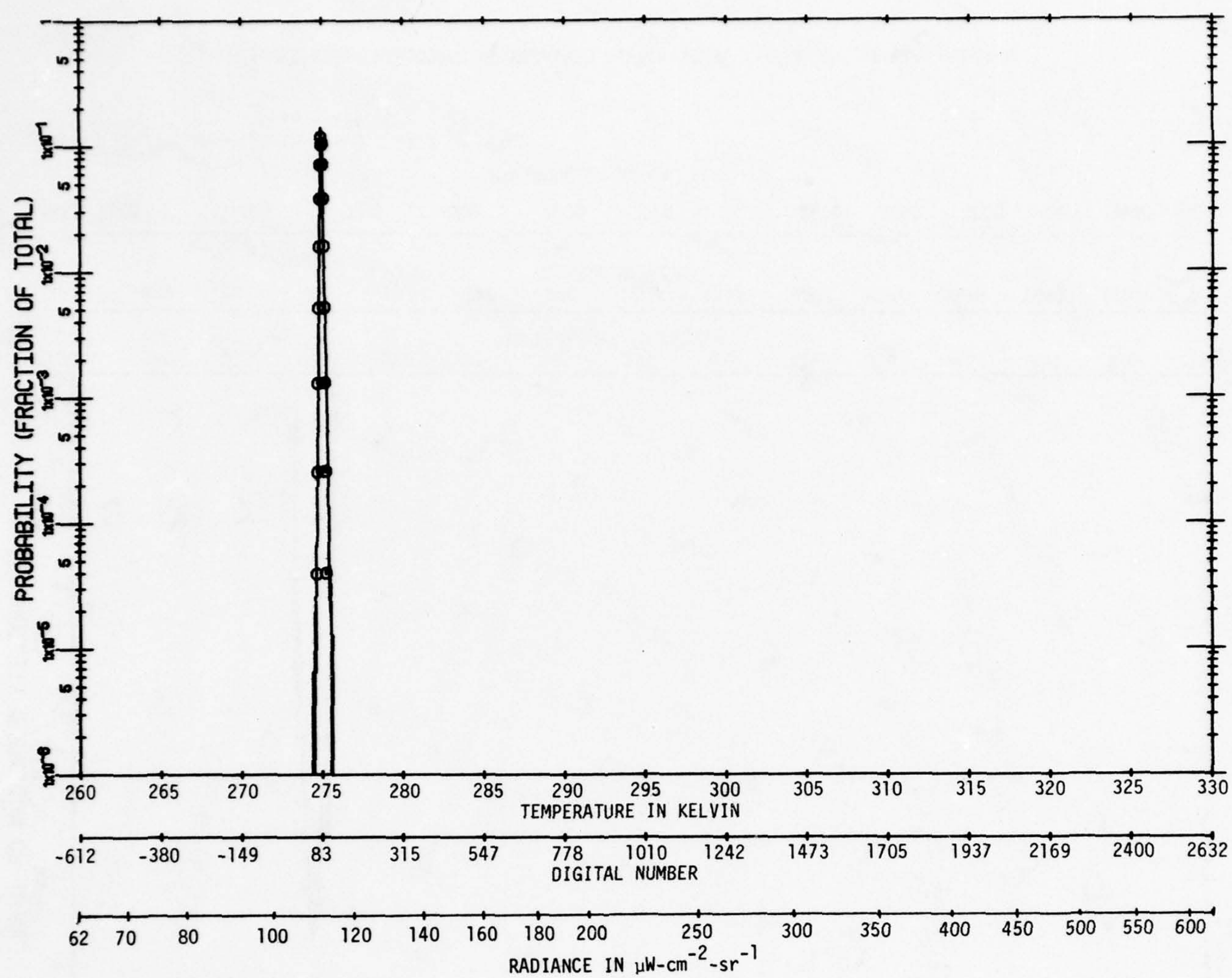
Area: CITY Wavelength = 4.5 - 5.5 μm
Mean = 275.15
Std. Dev. = 0.21

FIGURE 25c. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



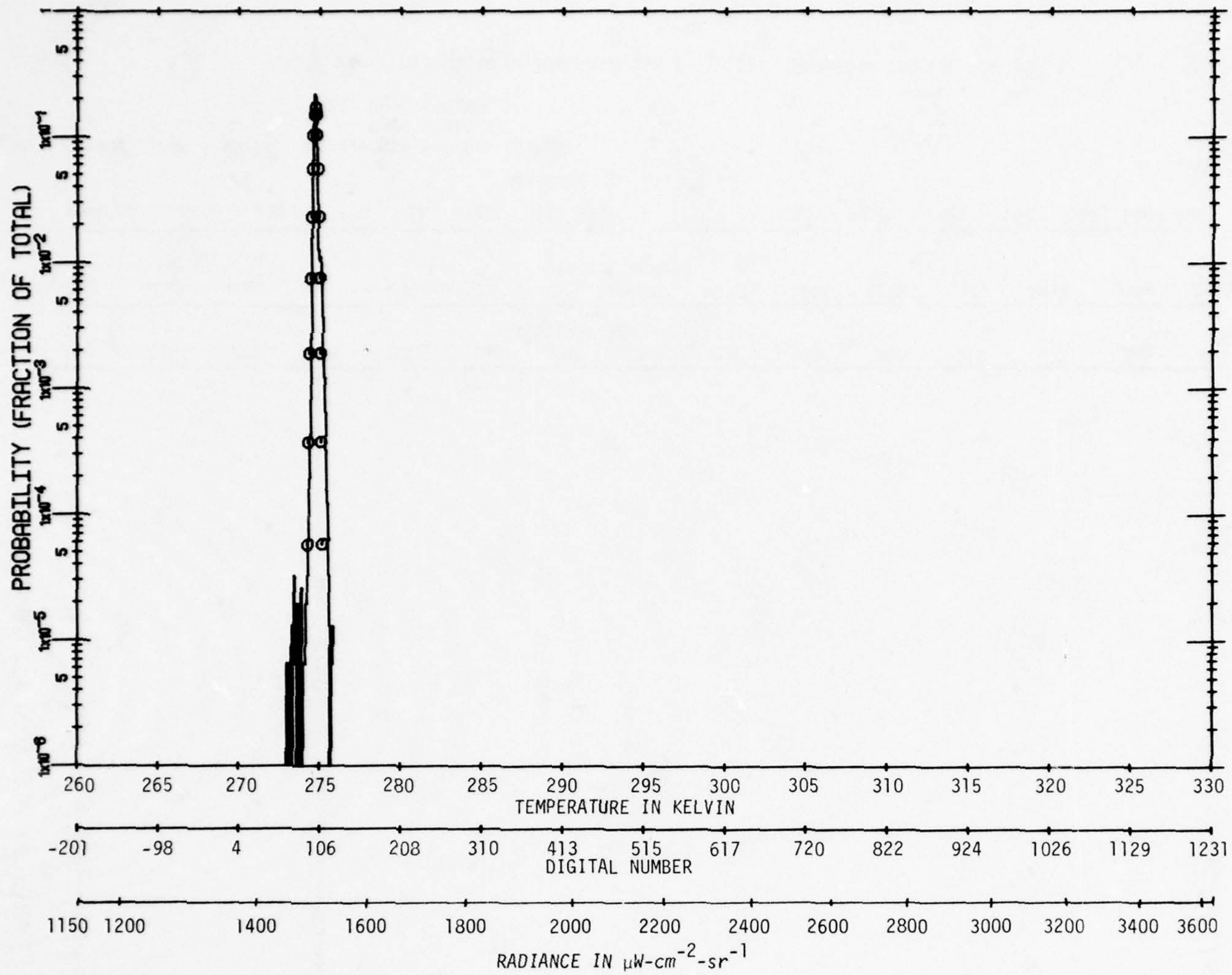
Area: CITY Wavelength = 9.0 - 11.4 μm
Mean = 274.98
Std. Dev. = 0.35

FIGURE 25d. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



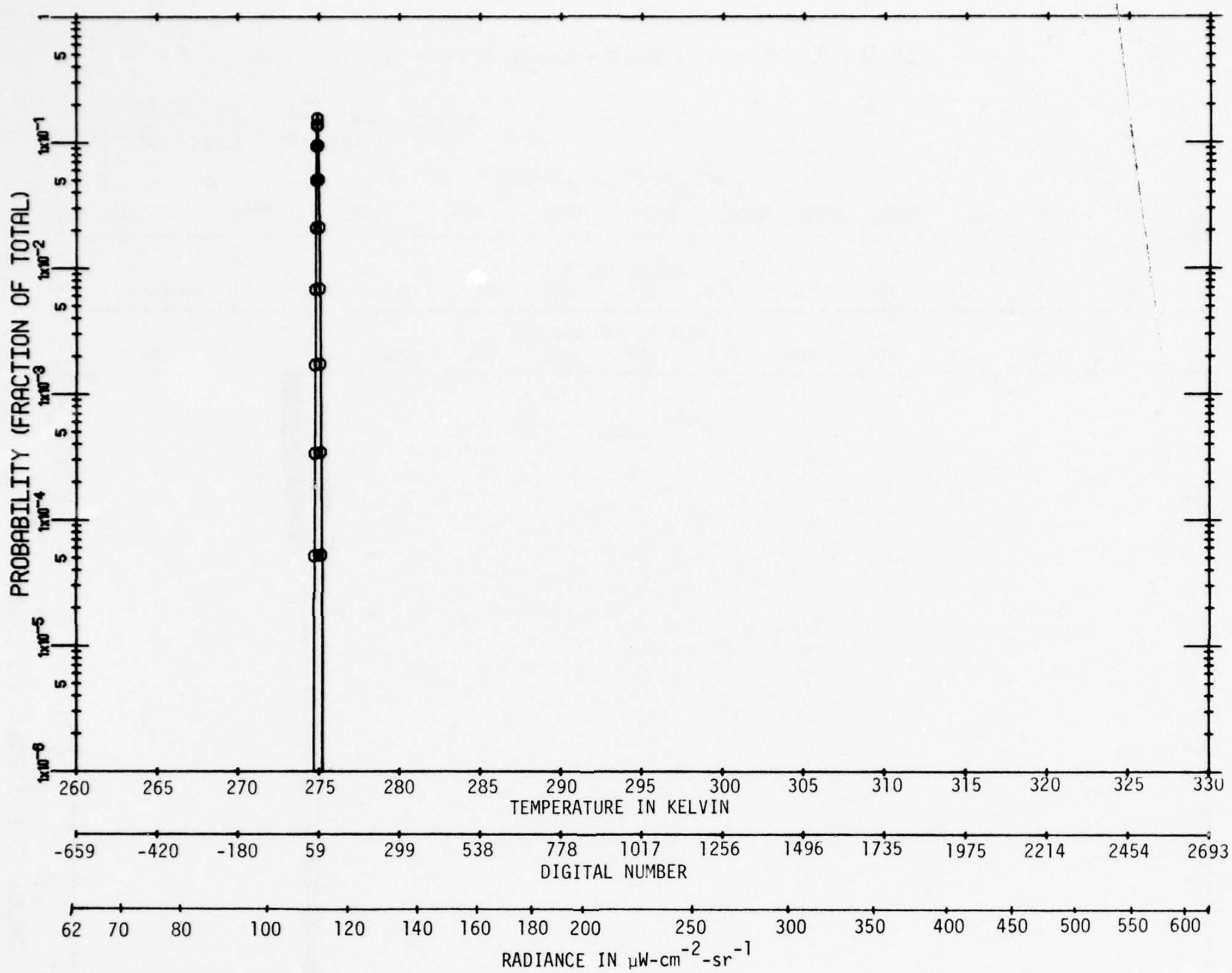
Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 274.96
Std. Dev. = 0.07

FIGURE 26a. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



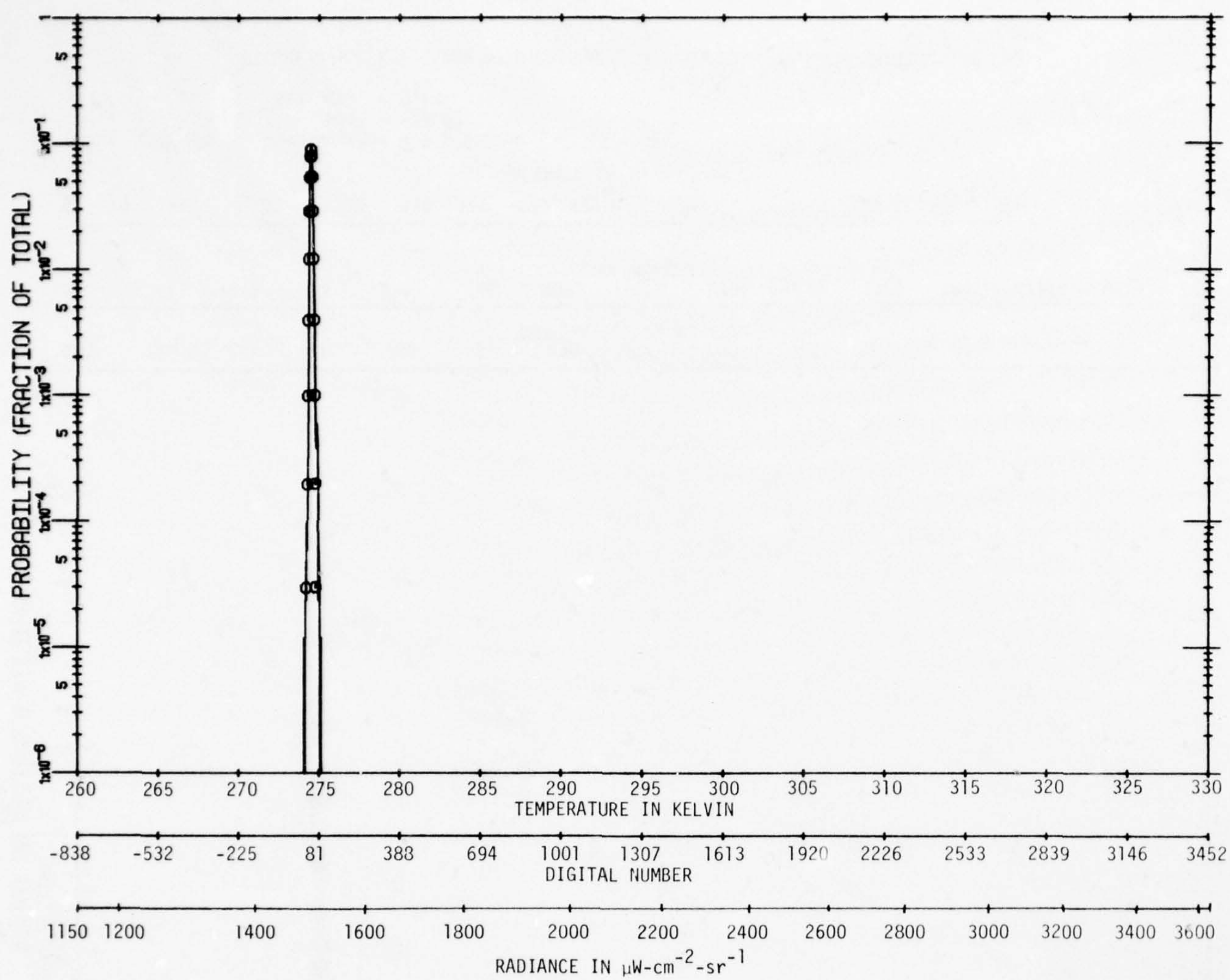
Area: LAND & WATER Wavelength = 9.0 - 11.4 μm
Mean = 274.74
Std. Dev. = 0.11

FIGURE 26b. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



Area: LAND & WATER Wavelength = 4.5 - 5.5 μm
Mean = 274.91
Std. Dev. = 0.05

FIGURE 26c. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



Area: LAND & WATER Wavelength = 9.0 - 11. 4 μm
Mean = 274.51
Std. Dev. = 0.07

FIGURE 26d. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)

AD-A077 554 ENVIRONMENTAL RESEARCH INST OF MICHIGAN ANN ARBOR IN--ETC F/G 17/5
STATISTICAL ANALYSIS OF TERRAIN AND WATER (ICE) BACKGROUNDS IN --ETC(U)
OCT 79 A J LAROCCA N60530-79-R-0036
UNCLASSIFIED ERIM-139900-2-F NL

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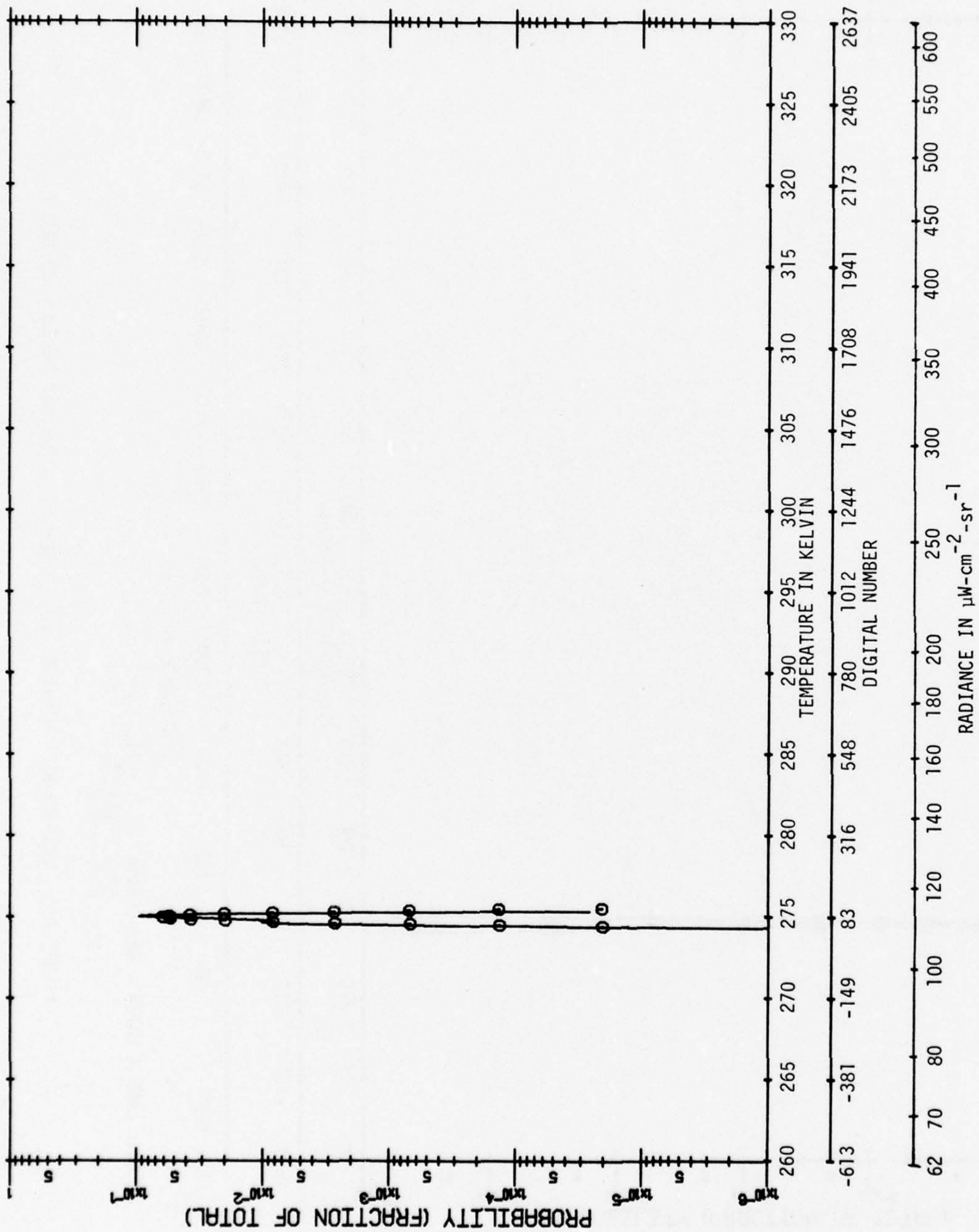
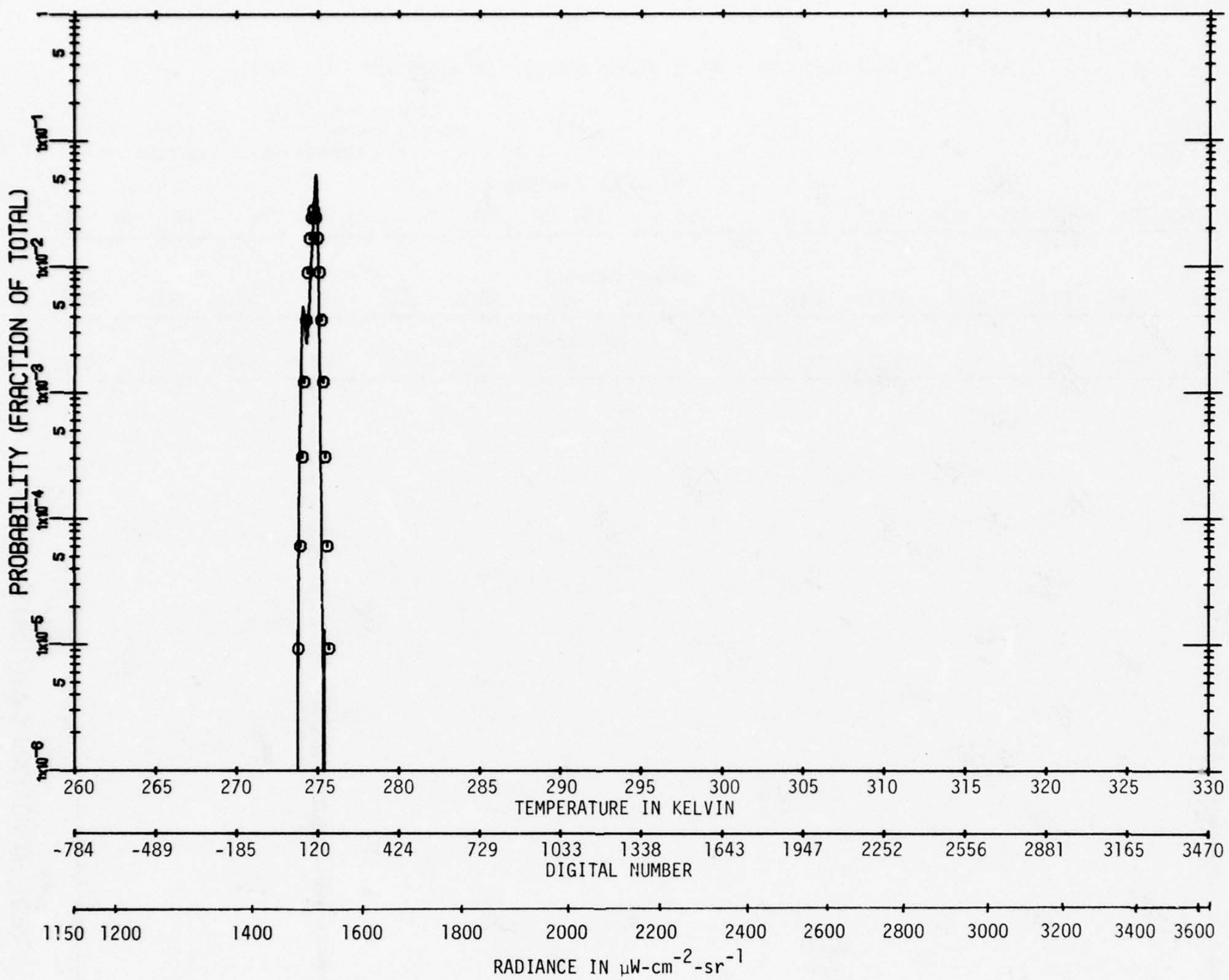


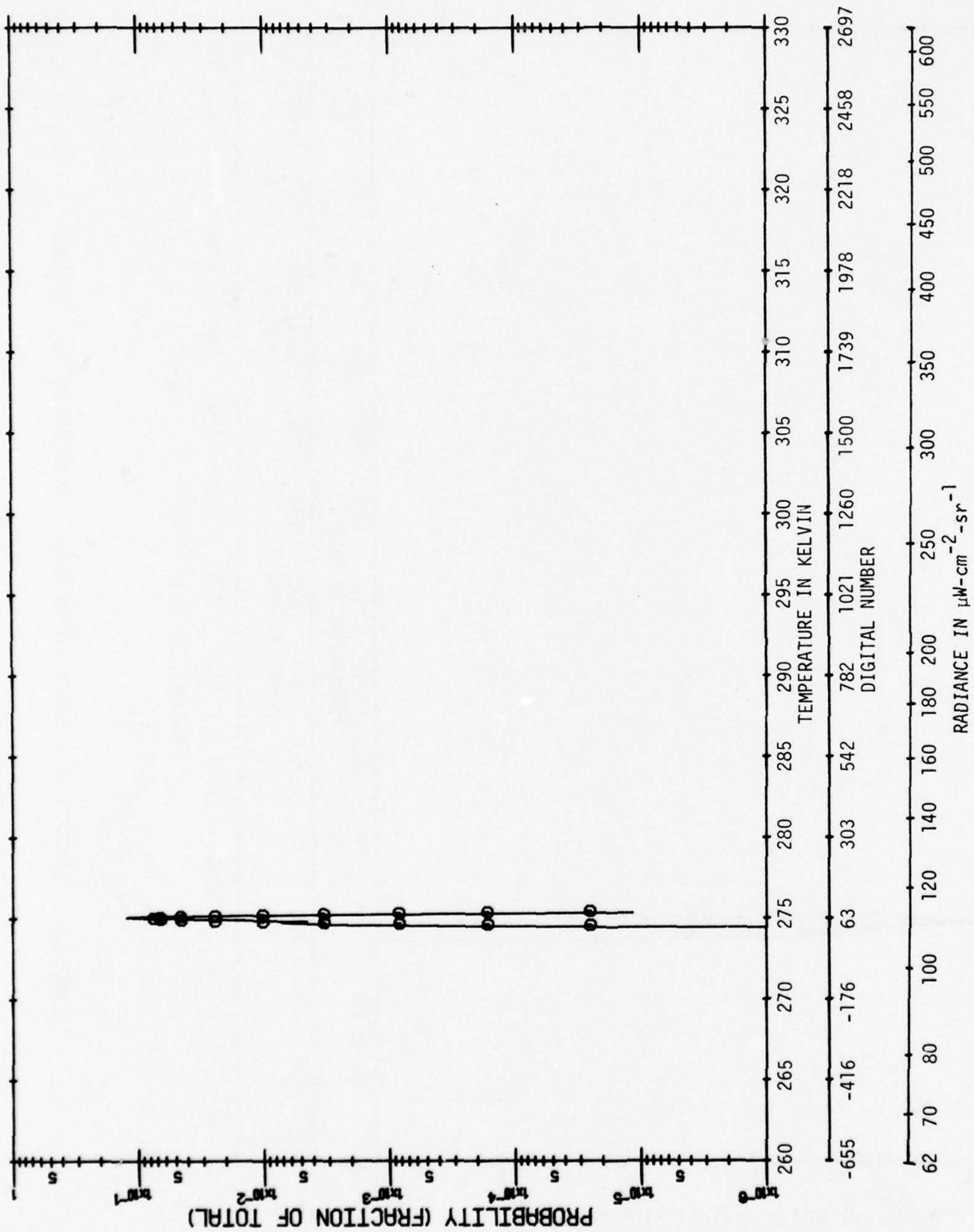
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 274.98
Std. Dev. = 0.14

FIGURE 27a. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



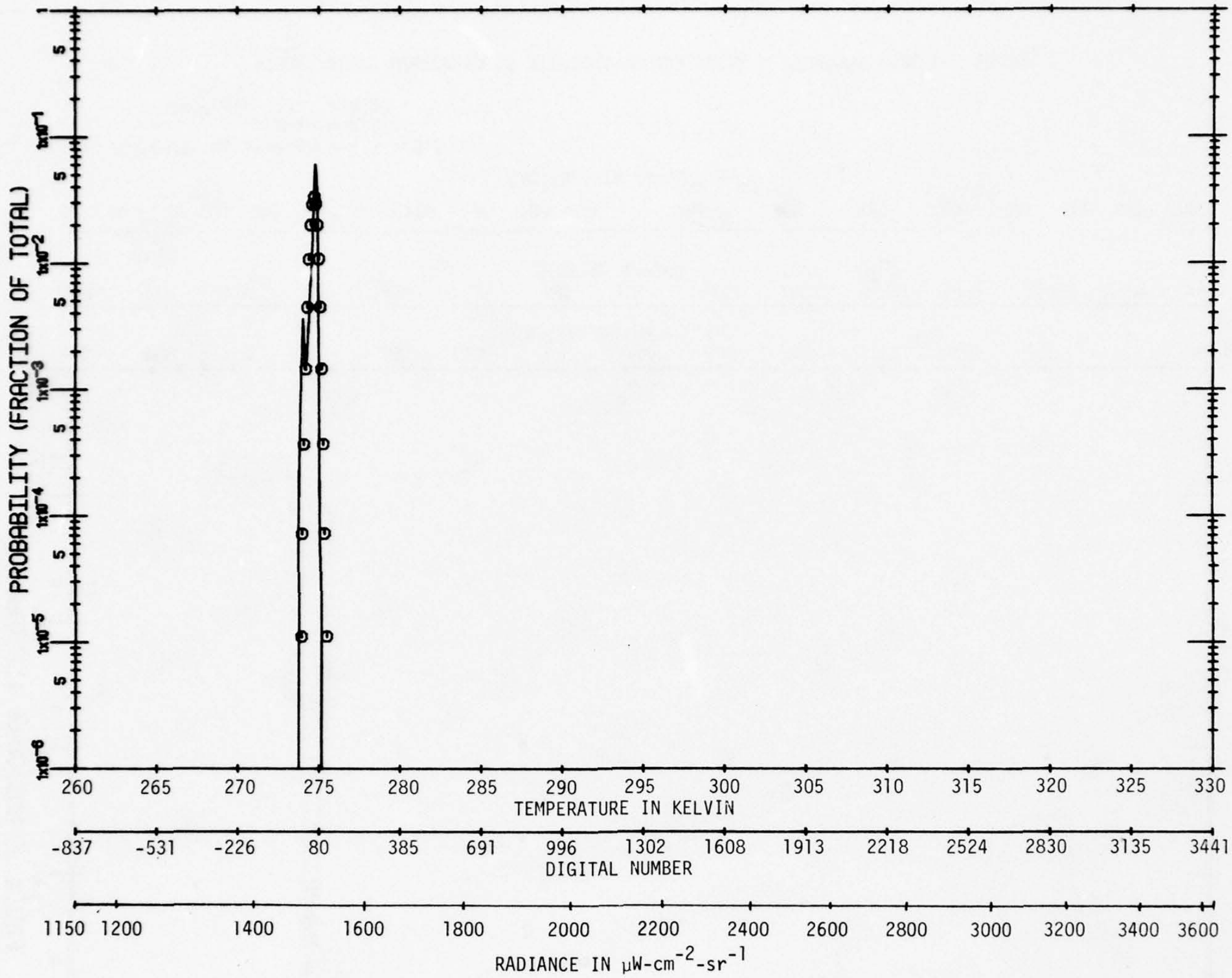
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 274.76
Std. Dev. = 0.24

FIGURE 27b. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



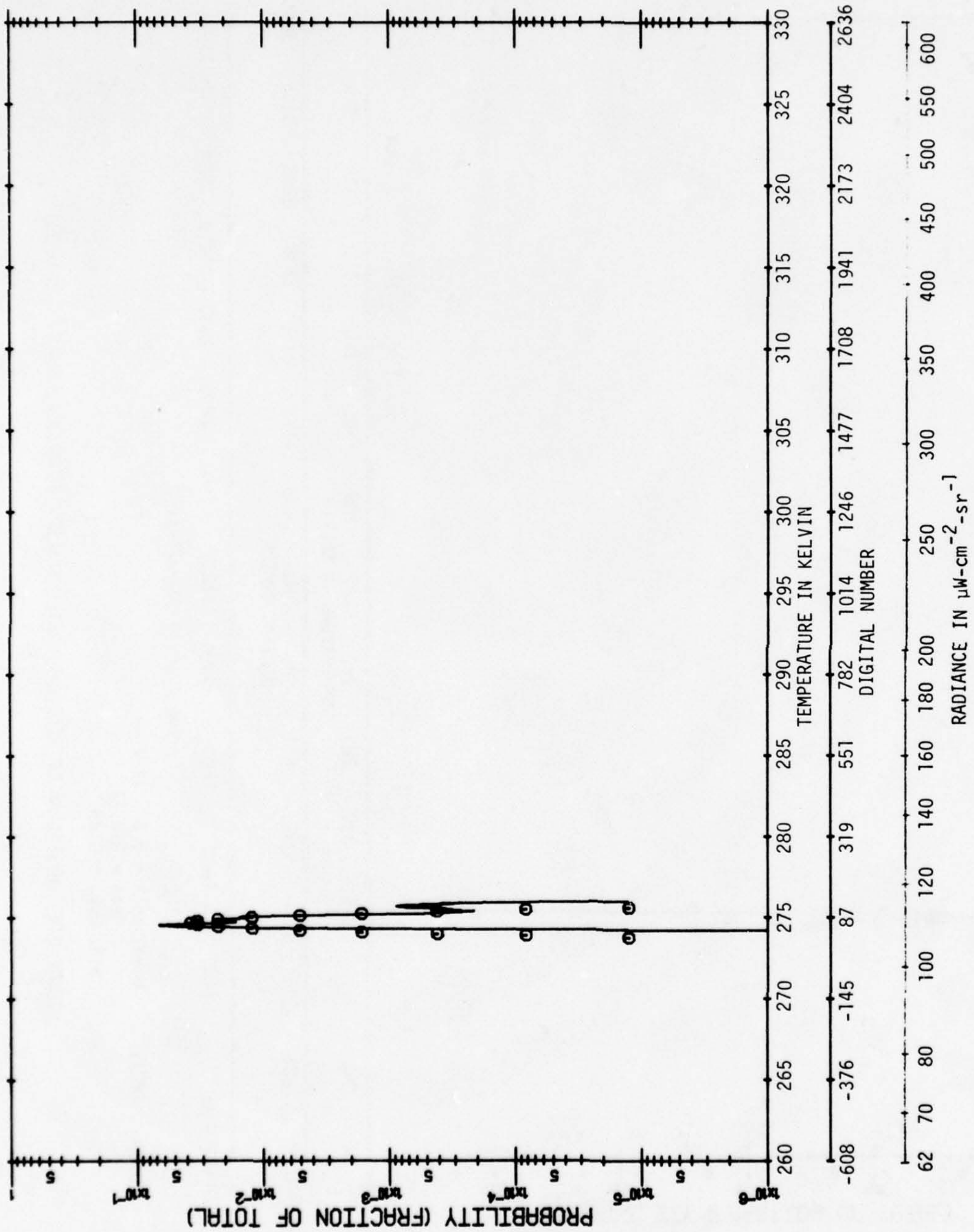
Area: CONIFERS Wavelength = 4.5 - 5.5 μm
Mean = 275.00
Std. Dev. = 0.11

FIGURE 27c. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



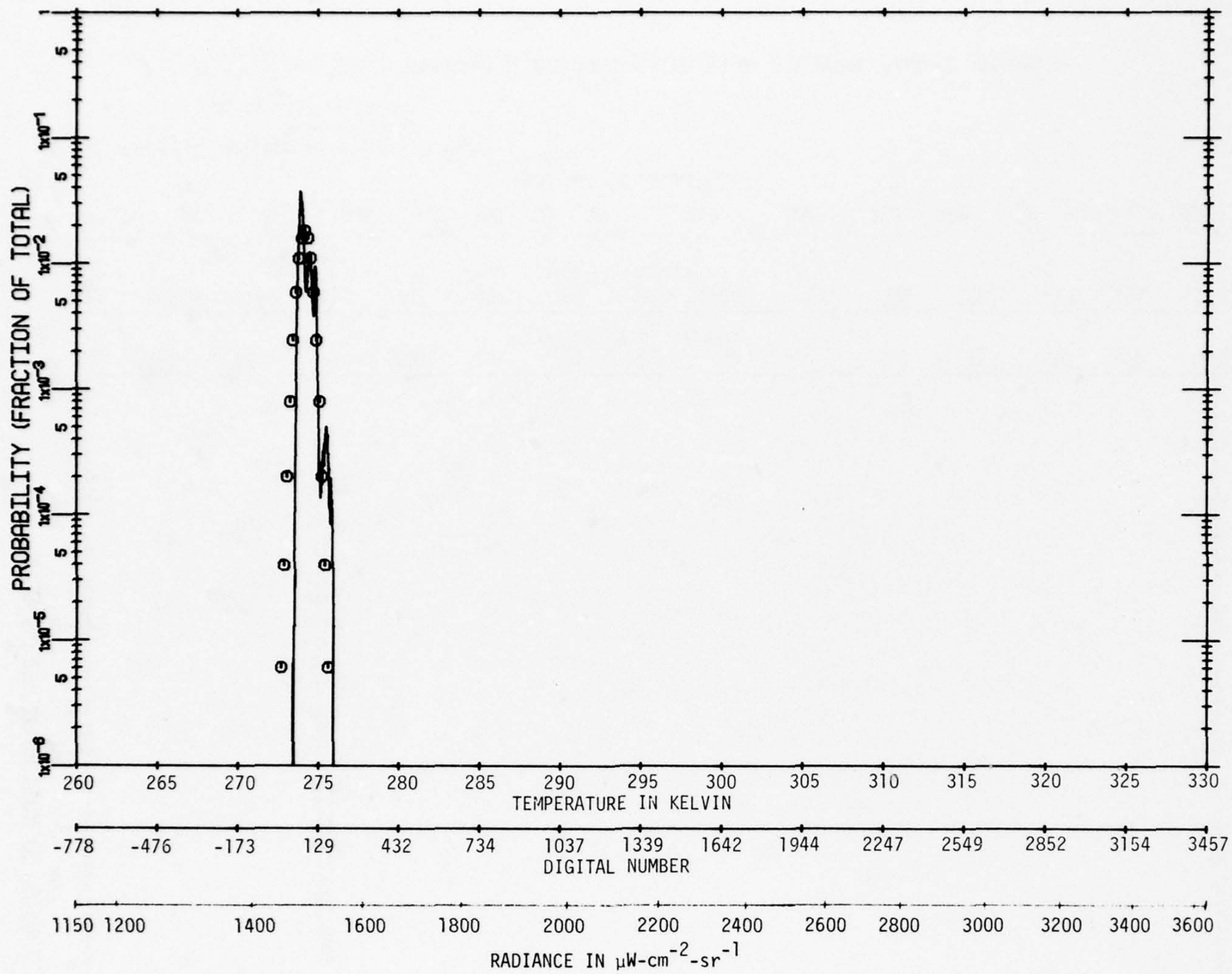
Area: CONIFERS Wavelength = 9.0 - 11.4 μm
Mean = 274.72
Std. Dev. = 0.20

FIGURE 27d. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



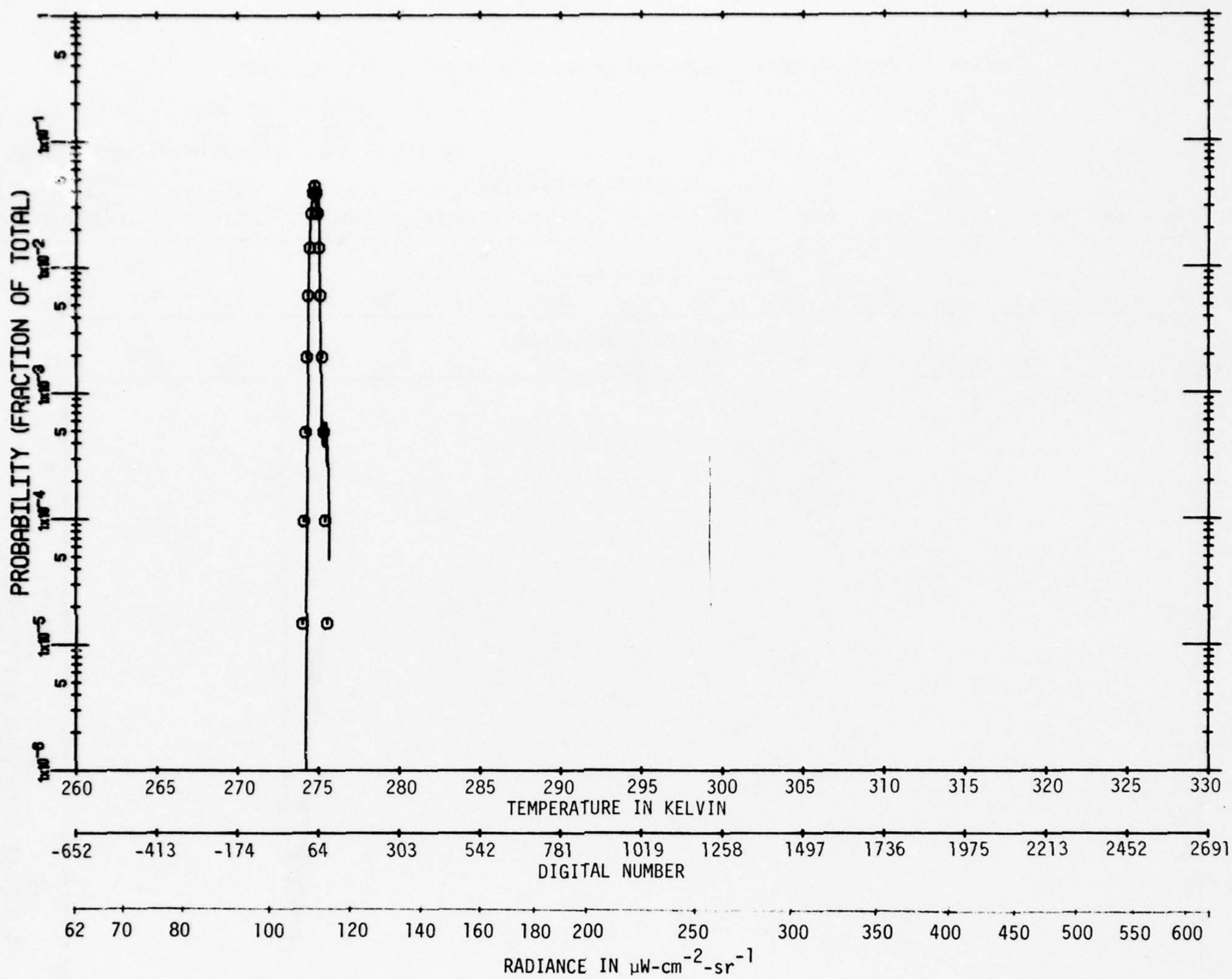
Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 274.66
Std. Dev. = 0.23

FIGURE 28a. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



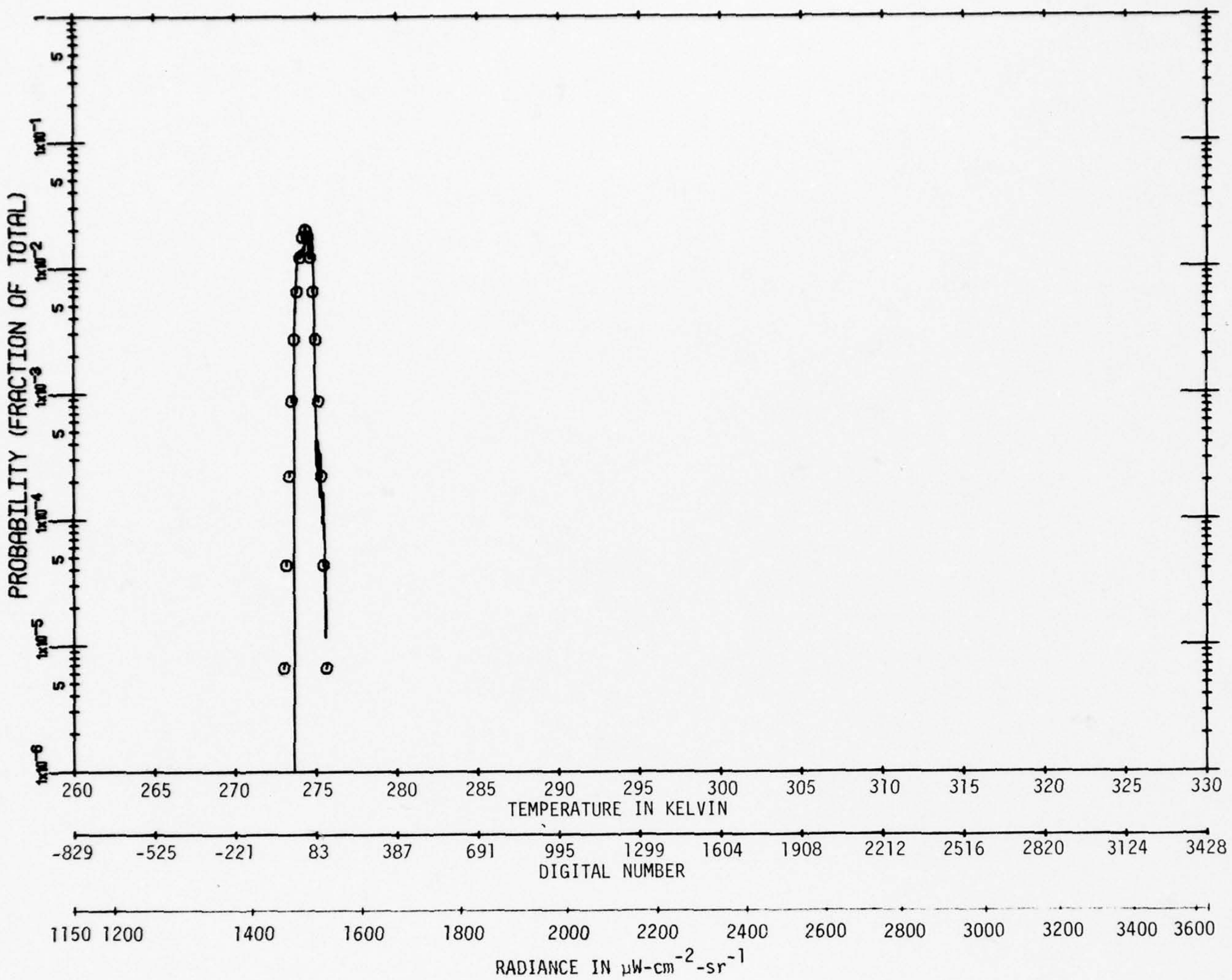
Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.16
Std. Dev. = 0.36

FIGURE 28b. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 90 DEG.)



Area: FARMLAND Wavelength = 4.5 - 5.5 μm
Mean = 274.75
Std. Dev. = 0.19

FIGURE 28c. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)



Area: FARMLAND Wavelength = 9.0 - 11.4 μm
Mean = 274.33
Std. Dev. = 0.33

FIGURE 28d. HISTOGRAM OF MICHIGAN WINTER SCENE - MIDNIGHT (ANGLE: 35 DEG.)

3
SPECTRAL CORRELATIONS

As part of the statistical processing of the imagery, the analysis is programmed to produce means, standard deviations, and correlations between the different spectral regions. These spectral regions, and their associated channel numbers and units, are as follow:

Channel 8: 3.5-3.9 μm (°K)

Channel 10: 4.5-5.5 μm (°K)

Channel 12: 9.0-11.4 μm (°K)

These results are shown in Tables 2 through 17.

One reason for producing correlations is to help reduce the number of bands in which data must be taken for completeness in covering any situation. The best for general data collection are those in window regions where the atmosphere has the least effect. The 4.5-5.5 μm band, for example, is often strongly affected, although in the present case, because of meteorological stability, the effect is not as noticeable as in data from scenery obtained in previous missions.

Correlations between the 4.5-5.5 μm band and the 9.0-11.4 μm band are generally relatively large, although not as large as in the case of the Port Hueneme data (Reference 2). The cases in which the correlations are not as large, i.e., in the range around 50% or so, are those for which the histograms are extremely narrow, with standard deviations only slightly above the system noise as derived from signals on the calibration plates. There is one case, the midnight scene over land and water, in which the correlation is essentially zero. The reason for this is that the temperature is almost uniform over most of the scene (see Figure 12).

[2] A. J. LaRocca, Statistical Analysis of Terrain and Water Backgrounds in the Vicinity of Port Hueneme, California, Report No. 132300-3-T, ERIM, April 1979.

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TABLE 2. PRE-DAWN - CITY SPECTRAL STATISTICS

Number of Subregions:	1
Line Increment Used:	1
Pixel Increment Used:	1
Correlation Channels:	10 (4.5 - 5.5 μm)
	12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.818	1.000

Channels	10	12
Mean	2.7515E+02	2.7507E+02
Standard Deviation	2.2520E-01	3.9349E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.797	1.000

Channels	10	12
Mean	2.7513E+02	2.7499E+02
Standard Deviation	1.8358F-01	3.1458E-01
Total Points	84400.	84400.

TABLE 3. PRE-DAWN - LAND AND WATER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.654	1.000

Channels	10	12
Mean	2.7505E+02	2.7487E+02
Standard Deviation	1.1105E-01	1.7481E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.724	1.000

Channels	10	12
Mean	2.7496E+02	2.7464E+02
Standard Deviation	9.6316E-02	1.6107E-01
Total Points	84400.	84400.

TABLE 4. PRE-DAWN - CONIFER SPECTRAL STATISTICS

Number of Subregions:	1
Line Increment Used:	1
Pixel Increment Used:	1
Correlation Channels:	10 (4.5 - 5.5 μm)
	12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.658	1.000

Channels	10	12
Mean	2.7486E+02	2.7466E+02
Standard Deviation	9.7860E-02	1.7563E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.553	1.000

Channels	10	12
Mean	2.7483E+02	2.7466E+02
Standard Deviation	7.0218E-02	1.3288E-01
Total Points	84400.	84400.

TABLE 5. PRE-DAWN - FARMLAND SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.765	1.000

Channels	10	12
Mean	2.7455E+02	2.7407E+02
Standard Deviation	1.4660E-01	2.2202E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.840	1.000

Channels	10	12
Mean	2.7445E+02	2.7407E+02
Standard Deviation	1.5195E-01	2.4940E-01
Total Points	84400.	84400.

TABLE 6. NOON - CITY SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 8 (3.5 - 3.9 μm)
10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	8	10	12
8	1.000		
10	0.364	1.000	
12	0.441	0.600	1.000

Channels	8	10	12
Mean	2.8380E+02	2.7805E+02	2.7905E+02
Standard Deviation	6.2127E+00	2.0422E+00	2.7589E+00
Total Points	154000.	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	8	10	12
8	1.000		
10	0.268	1.000	
12	0.442	0.465	1.000

Channels	8	10	12
Mean	2.8527E+02	2.7870E+02	2.7974E+02
Standard Deviation	5.3784E+00	2.1785E+00	2.9419E+00
Total Points	83600.	83600.	83600.

TABLE 7. NOON - LAND AND WATER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 8 (3.5 - 3.9 μm)
10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	8	10	12
8	1.000		
10	0.313	1.000	
12	0.345	0.793	1.000

Channels	8	10	12
Mean	2.8120E+02	2.7681E+02	2.7747E+02
Standard Deviation	4.1248E+00	1.1984E+00	1.6994E+00
Total Points	153200.	153200.	153200.

35° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	8	10	12
8	1.000		
10	0.541	1.000	
12	0.565	0.905	1.000

Channels	8	10	12
Mean	2.7937E+02	2.7623E+02	2.7616E+02
Standard Deviation	3.6773E+00	9.9948E-01	1.5471E+00
Total Points	83600.	83600.	83600.

TABLE 8. NOON - CONIFER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 8 (3.5 - 3.9 μm)
10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	8	10	12
8	1.000		
10	0.169	1.000	
12	0.188	0.611	1.000

Channels	8	10	12
Mean	2.8177E+02	2.7758E+02	2.7868E+02
Standard Deviation	3.6689E+00	6.3410E-01	9.3872E-01
Total Points	153200.	153200.	153200.

35° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	8	10	12
8	1.000		
10	0.206	1.000	
12	0.228	0.640	1.000

Channels	8	10	12
Mean	2.8505E+02	2.7869E+02	2.8003E+02
Standard Deviation	2.8419E+00	5.3734E-01	8.3943E-01
Total Points	83600.	83600.	83600.

TABLE 9. NOON - FARMLAND SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 8 (3.5 - 3.9 μm)
10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	8	10	12
8	1.000		
10	0.174	1.000	
12	0.266	0.607	1.000

Channels	8	10	12
Mean	2.7966E+02	2.7662E+02	2.7723E+02
Standard Deviation	4.2649E+00	9.4617E-01	1.2254E+00
Total Points	153200.	153200.	153200.

35° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	8	10	12
8	1.000		
10	0.315	1.000	
12	0.396	0.687	1.000

Channels	8	10	12
Mean	2.8104E+02	2.7736E+02	2.7791E+02
Standard Deviation	3.4479E+00	1.0462E+00	1.4930E+00
Total Points	83600.	83600.	83600.

TABLE 10. SUNSET - CITY SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.703	1.000

Channels	10	12
Mean	2.7560E+02	2.7559E+02
Standard Deviation	3.5060E-01	4.9331E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.711	1.000

Channels	10	12
Mean	2.7556E+02	2.7536E+02
Standard Deviation	2.9188E-01	4.3698E-01
Total Points	84400.	84400.

TABLE 11. SUNSET - LAND AND WATER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

<u>90° Depression</u>

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.882	1.000

Channels	10	12
Mean	2.7525E+02	2.7512E+02
Standard Deviation	2.6181E-01	4.2969E-01
Total Points	154000.	154000.

<u>35° Depression</u>

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.904	1.000

Channels	10	12
Mean	2.7529E+02	2.7497E+02
Standard Deviation	2.3681E-01	4.8677E-01
Total Points	84400.	84400.

TABLE 12. SUNSET - CONIFER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.768	1.000

Channels	10	12
Mean	2.7540E+02	2.7544E+02
Standard Deviation	1.6557E-01	2.6030E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.793	1.000

Channels	10	12
Mean	2.7543E+02	2.7537E+02
Standard Deviation	1.3133E-01	2.2989E-01
Total Points	84400.	84400.

TABLE 13. SUNSET - FARMLAND SPECTRAL STATISTICS

Number of Subregions:	1
Line Increment Used:	1
Pixel Increment Used:	1
Correlation Channels:	10 (4.5 - 5.5 μm)
	12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.744	1.000

Channels	10	12
Mean	2.7501E+02	2.7479E+02
Standard Deviation	2.8952E-01	4.0305E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.844	1.000

Channels	10	12
Mean	2.7502E+02	2.7470E+02
Standard Deviation	2.9582E-01	4.5508E-01
Total Points	84400.	84400.

TABLE 14. MIDNIGHT - CITY SPECTRAL STATISTICS

Number of Subregions:	1
Line Increment Used:	1
Pixel Increment Used:	1
Correlation Channels:	10 (4.5 - 5.5 μm)
	12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.707	1.000

Channels	10	12
Mean	2.7514E+02	2.7500E+02
Standard Deviation	1.7298E-01	2.7871E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.786	1.000

Channels	10	12
Mean	2.7515E+02	2.7498E+02
Standard Deviation	2.0678E-01	3.4865E-01
Total Points	84400.	84400.

TABLE 15. MIDNIGHT - LAND AND WATER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.420	1.000

Channels	10	12
Mean	2.7496E+02	2.7474E+02
Standard Deviation	7.3608E-02	1.0586E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523
Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.023	1.000

Channels	10	12
Mean	2.7491E+02	2.7451E+02
Standard Deviation	5.3676E-02	7.2946E-02
Total Points	84400.	84400.

TABLE 16. MIDNIGHT - CONIFER SPECTRAL STATISTICS

Number of Subregions: 1
Line Increment Used: 1
Pixel Increment Used: 1
Correlation Channels: 10 (4.5 - 5.5 μm)
12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 385

Correlation	10	12
10	1.000	
12	0.837	1.000

Channels	10	12
Mean	2.7498E+02	2.7476E+02
Standard Deviation	1.3947E-01	2.3721E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At: 123 523

Line Subarea Divisions At: 1 211

Correlation	10	12
10	1.000	
12	0.814	1.000

Channels	10	12
Mean	2.7500E+02	2.7472E+02
Standard Deviation	1.0951E-01	1.9783E-01
Total Points	84400.	84400.

TABLE 17. MIDNIGHT - FARMLAND SPECTRAL STATISTICS

Number of Subregions:	1
Line Increment Used:	1
Pixel Increment Used:	1
Correlation Channels:	10 (4.5 - 5.5 μm)
	12 (9.0 - 11.4 μm)

90° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	385

Correlation	10	12
10	1.000	
12	0.871	1.000

Channels	10	12
Mean	2.7466E+02	2.7416E+02
Standard Deviation	2.2886E-01	3.6454E-01
Total Points	154000.	154000.

35° Depression

Pixel Subarea Divisions At:	123	523
Line Subarea Divisions At:	1	211

Correlation	10	12
10	1.000	
12	0.905	1.000

Channels	10	12
Mean	2.7475E+02	2.7433E+02
Standard Deviation	1.9049E-01	3.2901E-01
Total Points	84400.	84400.

4
ELLIPSES

One of the statistics that is being gathered on various scenes as part of this backgrounds analysis program is "ellipse" statistics. These statistics are two-dimensional analogs of threshold crossing and pulse length statistics in one dimension. They are generated by identifying those contiguous areas in the image with data values that exceed some threshold value. The area corresponding to each cluster of contiguous pixels is then determined and tabulated. The centroid and first and second moments for each area are also determined to define an equivalent elliptical area, and tabulations are made of the distribution of contiguous areas in the image that exceed the threshold by area, perimeter, shape factor, or ratio of major-to-minor axis. These ellipse statistics are determined for each of several threshold settings. Single pixel and contiguous two-pixel exceedances are not included in the ellipse tabulations but the number of such exceedances are noted separately. The threshold levels are given in units of multiples (or fractions) of one standard deviation. Examples of ellipses for the various scenes are illustrated in Figures 29a through 40d. Certain features in the ellipses are clearly associated with comparable details in the imagery shown in the thermal imagery and the greymaps. The total area represented by each scene is approximately 1750 feet wide and 1650 feet high. Specific features can be identified in the greymaps by scan line and pixel numbers.

Tables 18a through 29d show how the contiguous areas that exceed several thresholds are distributed by area (square meters), perimeter (meters), and shape factor. The shape factor is defined to be the ratio of the perimeter/2π and the square root of the area/π, i.e.,

$$\text{shape factor} = \frac{\text{perimeter}/2}{(\text{area}/\pi)^{1/2}}$$

For a circular area, the shape factor would be unity.

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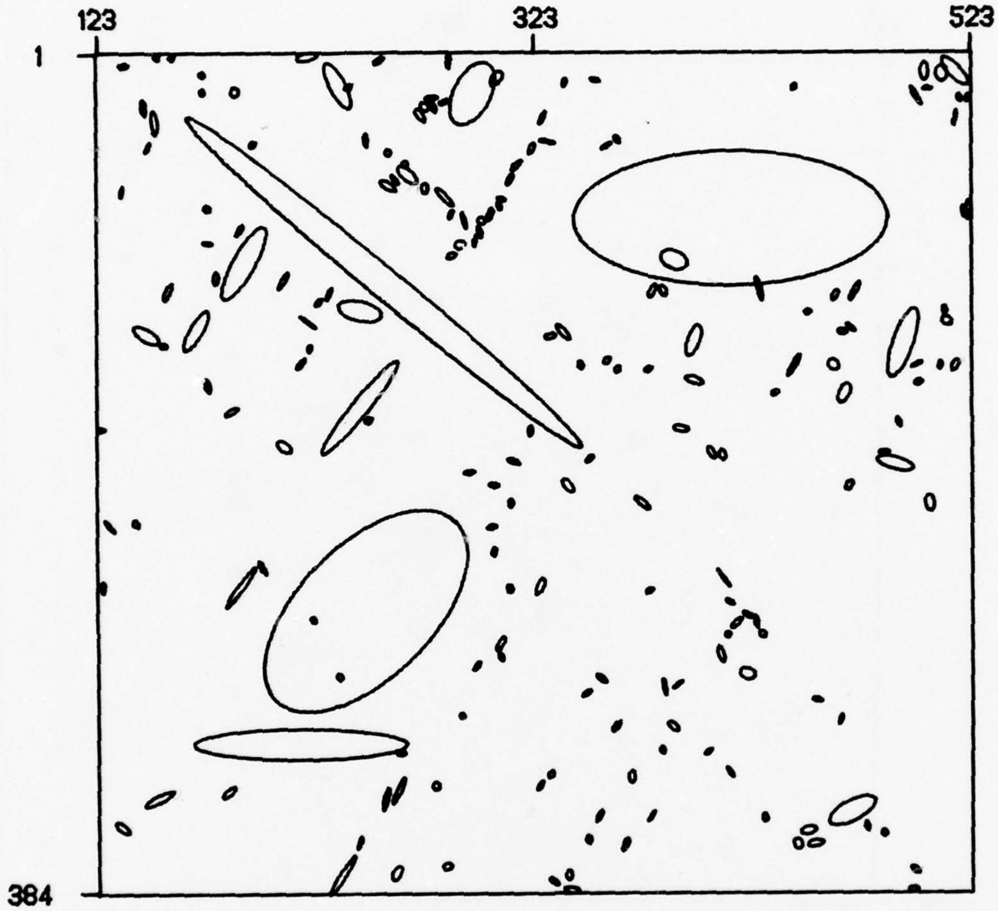
Since the number of ellipses generated in any ellipse picture depends on the threshold setting, the number of pictures can approach infinity. The decision on the number of ellipse pictures to include in this section is somewhat arbitrary, but strongly influenced the fact that the greater interest for systems analysts is competition between hidden targets and those background events with sufficiently high signals to make target detection difficult. It appears that two or three pictures tell enough of a story about the distribution of high-threshold events to be useful.

The reader will note that there are no ellipse pictures for the farmland area included in this section. This area was eliminated after examination in order to reduce the massiveness of data presentation. The farmland scene is not radiatively significantly different from the other scenes as can be seen in Figures 11 through 28 and Tables 2 through 17.

Pixel #

Scanline #



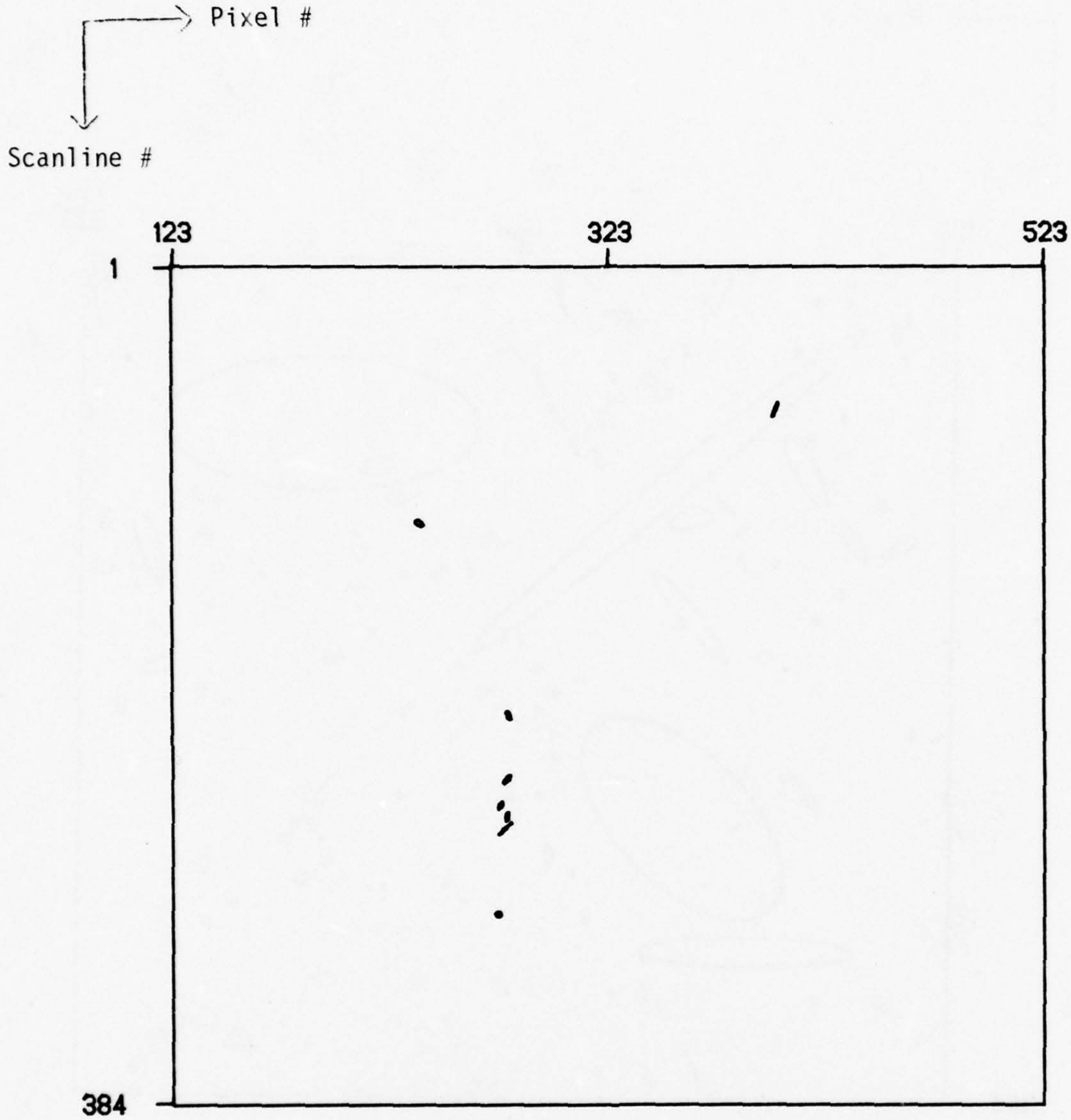
Area: CITY

Temperature Threshold

= Ave. + 0.85 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 29a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



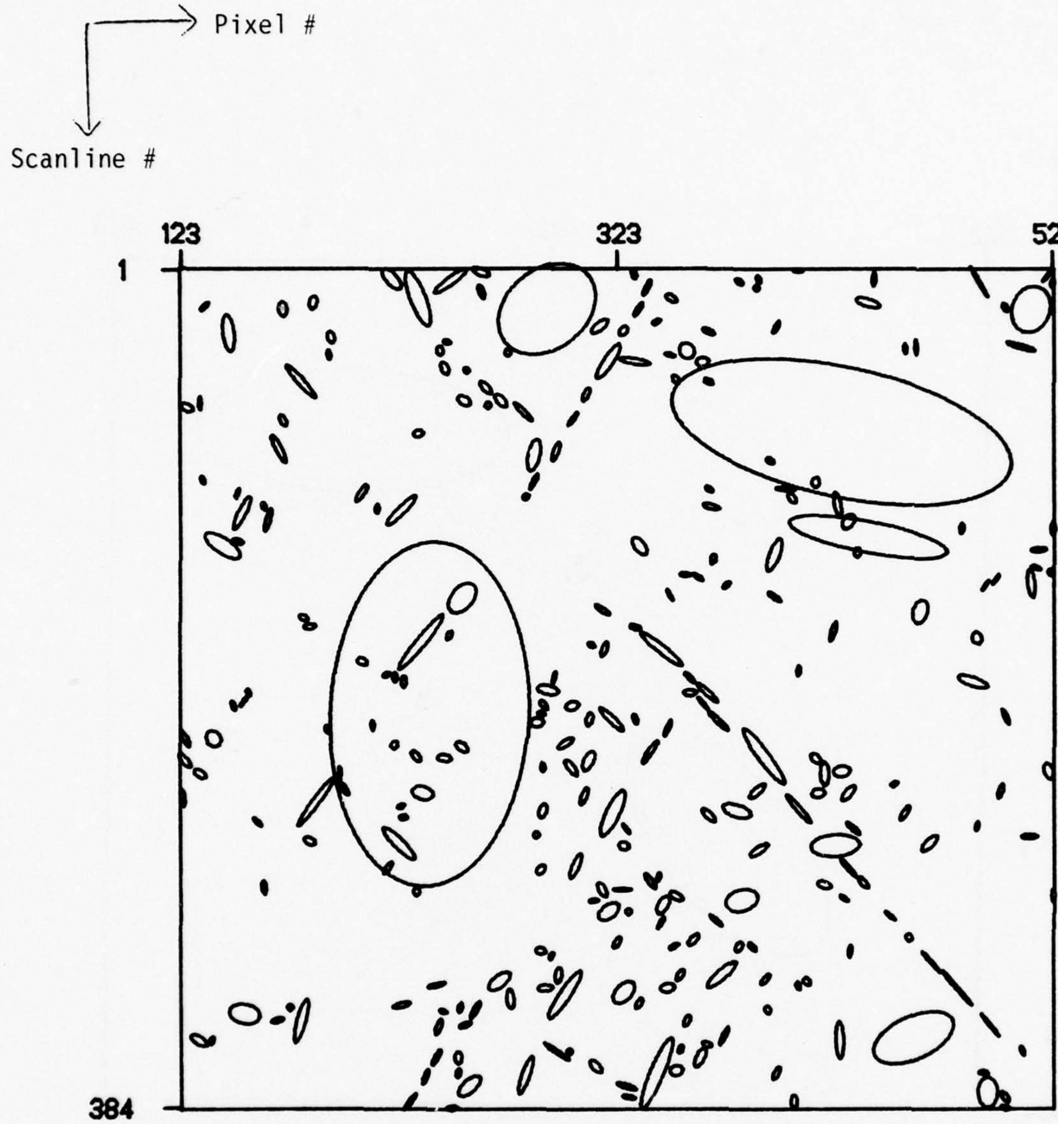
Area: CITY

Temperature Threshold

= Ave. + 2.87 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 29b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



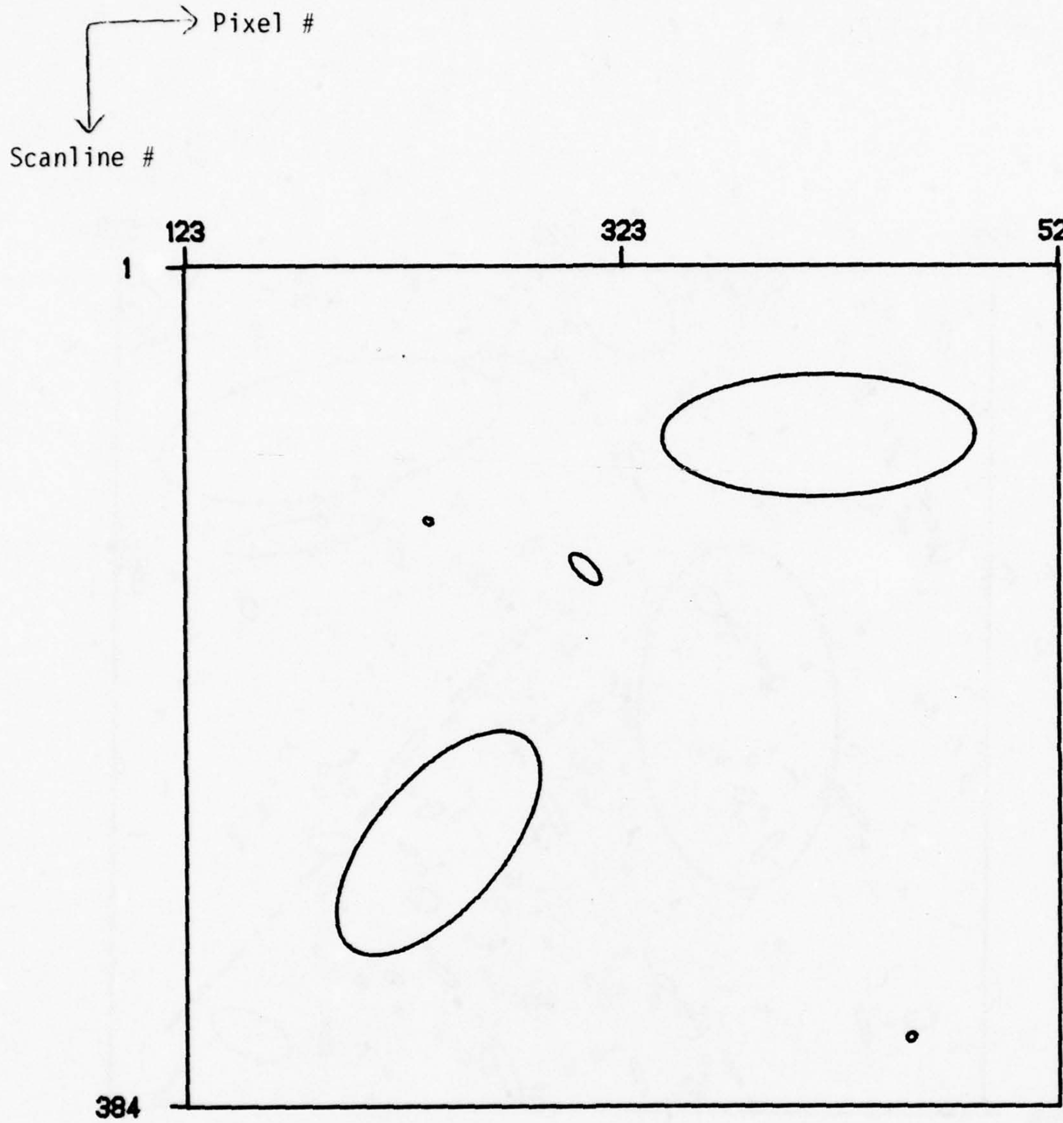
Area: CITY

Temperature Threshold

= Ave. + 0.50 σ

Wavelength = 9.0 - 11.0 μm

FIGURE 29c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



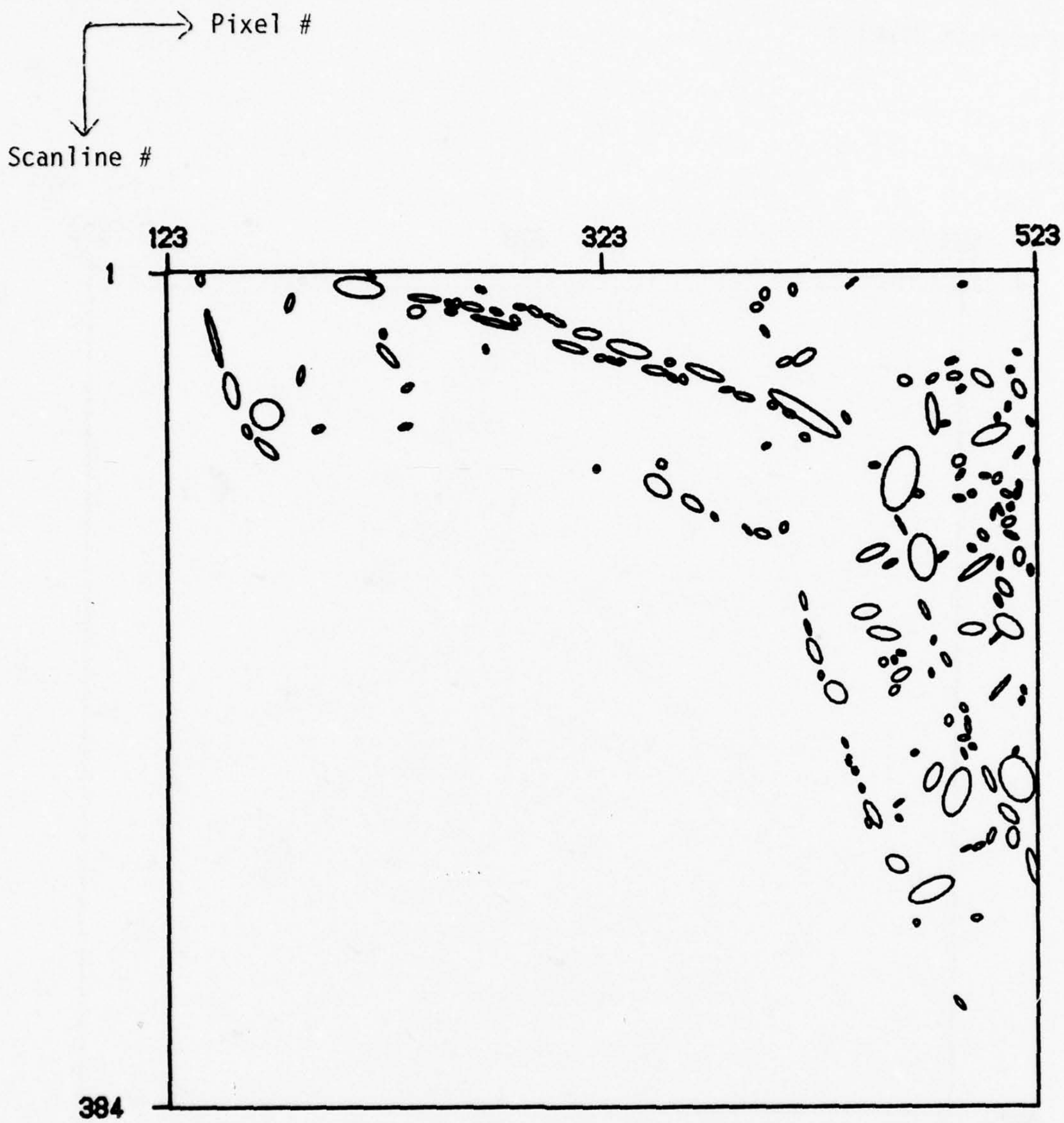
Area: CITY

Temperature Threshold

= Ave. + 2.03 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 29d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



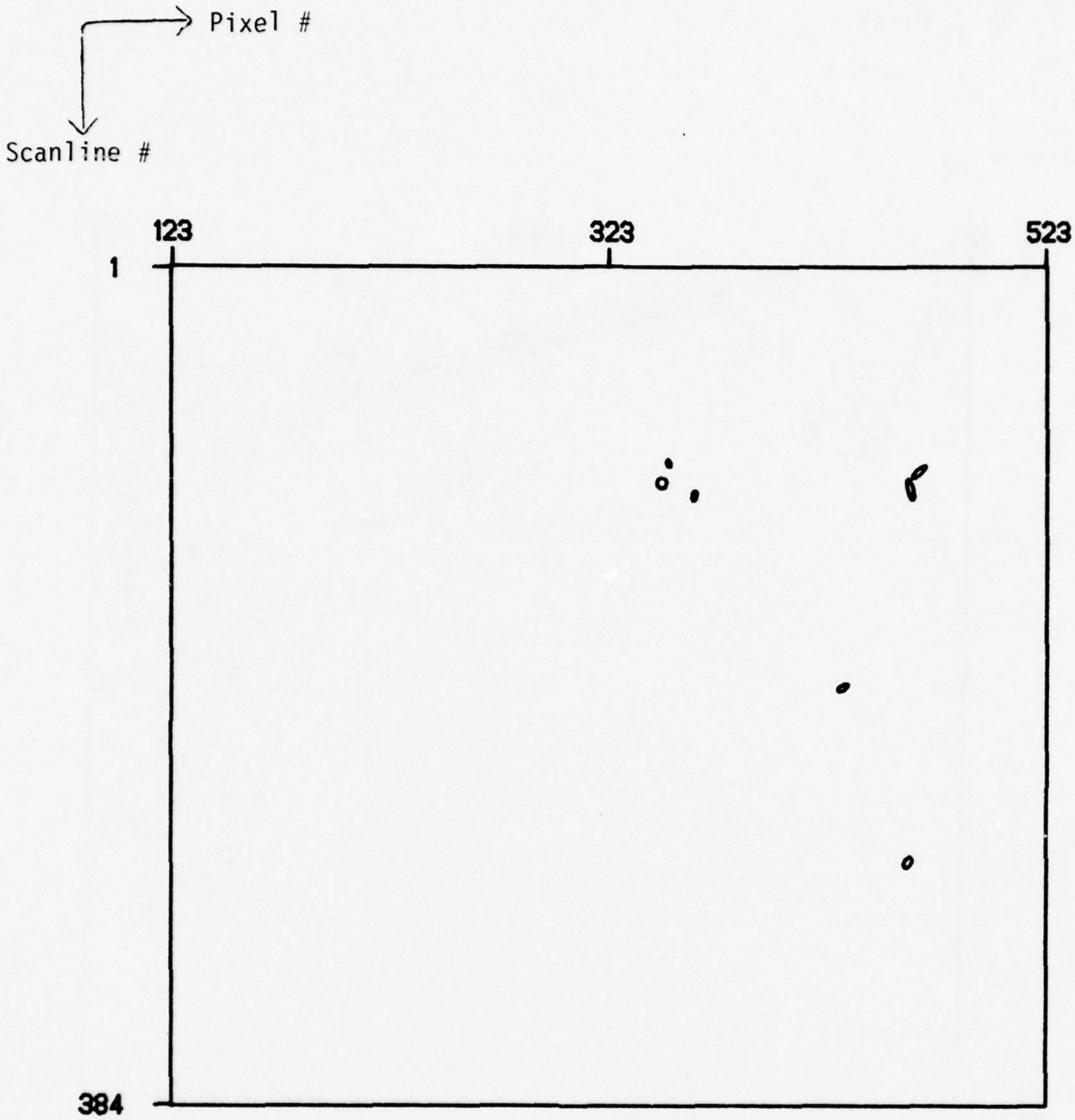
Area: LAND & WATER

Temperature Threshold

= Ave. + 2.15 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 30a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



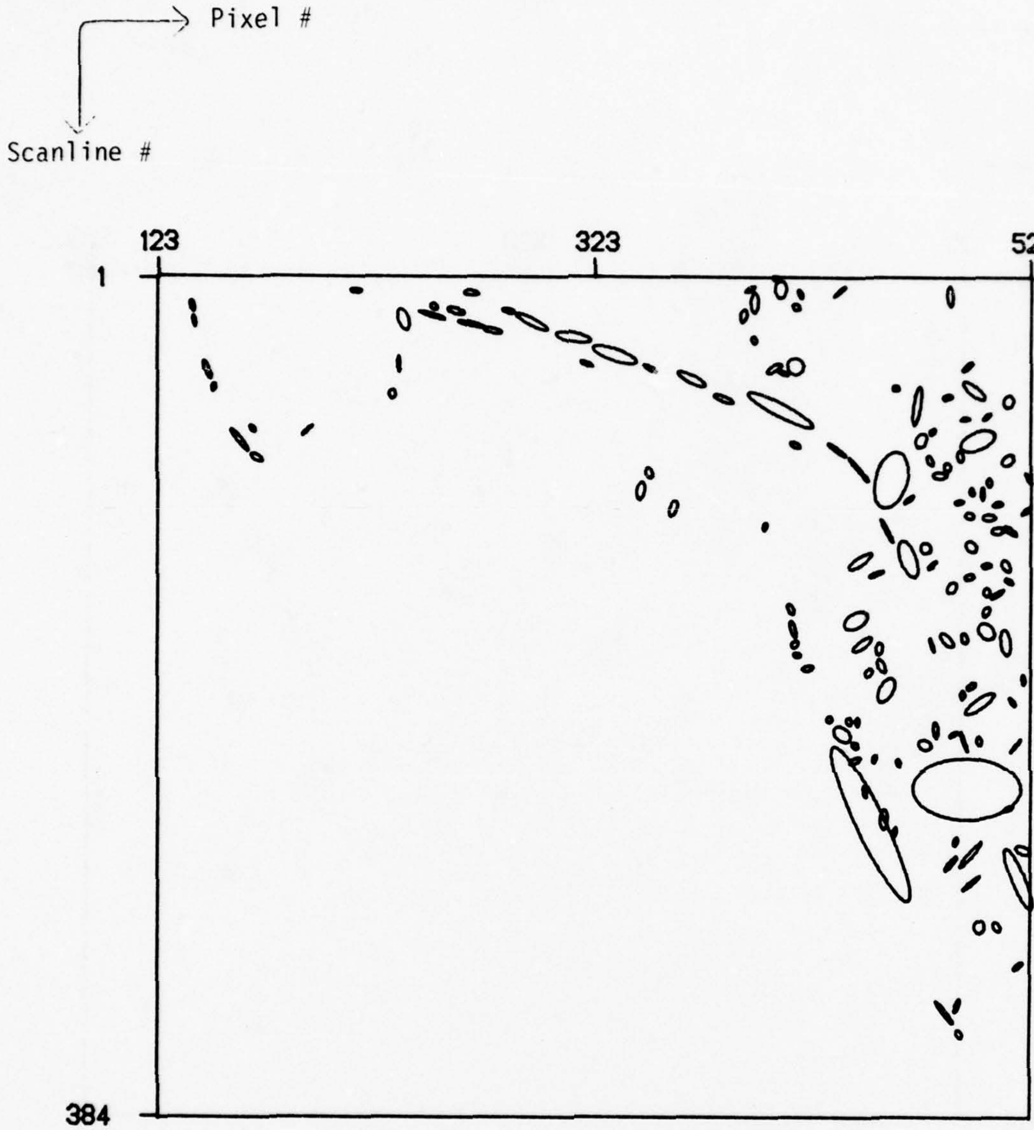
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.71 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 30b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



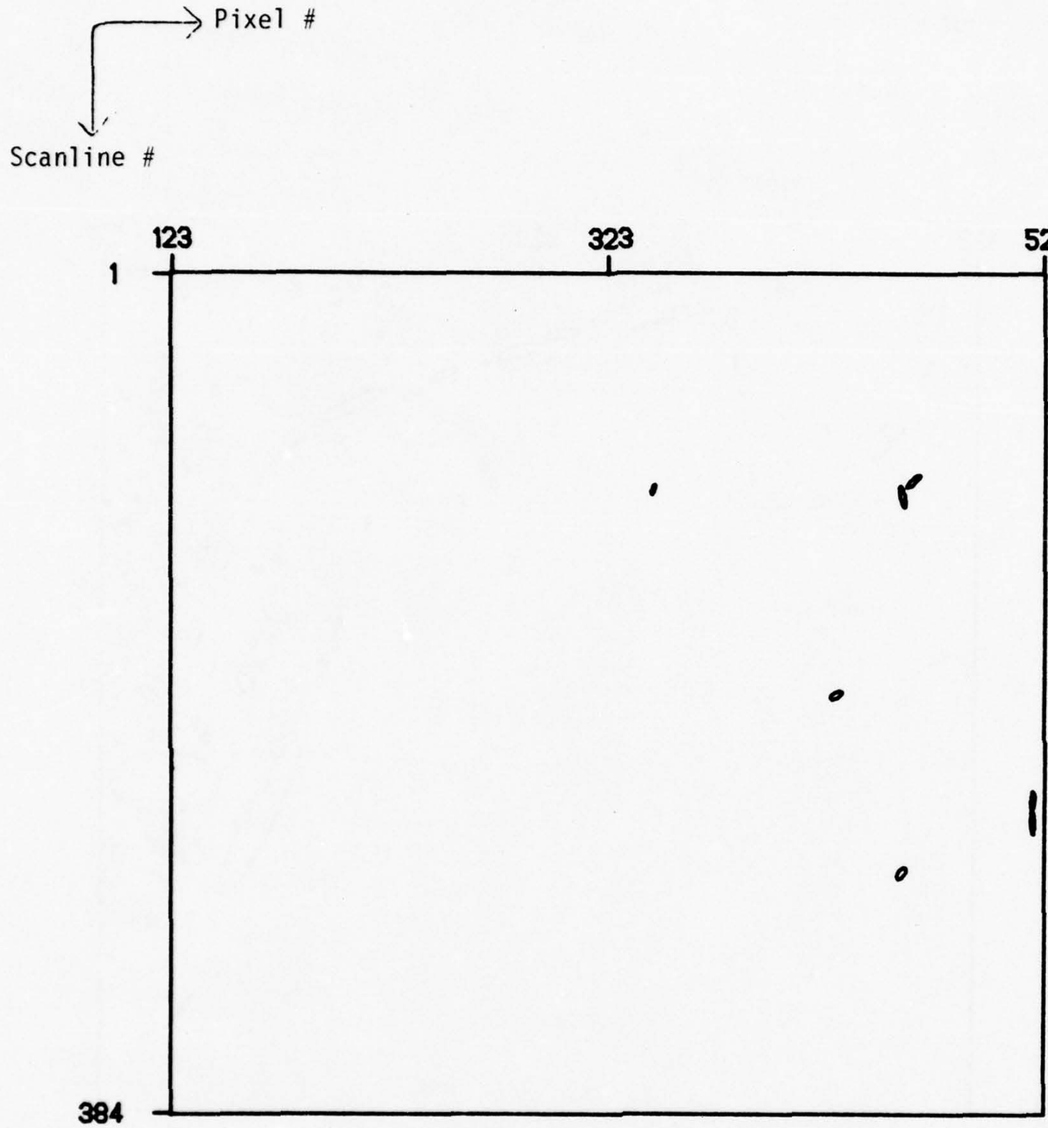
Area: LAND & WATER

Temperature Threshold

= Ave. + 2.09 σ

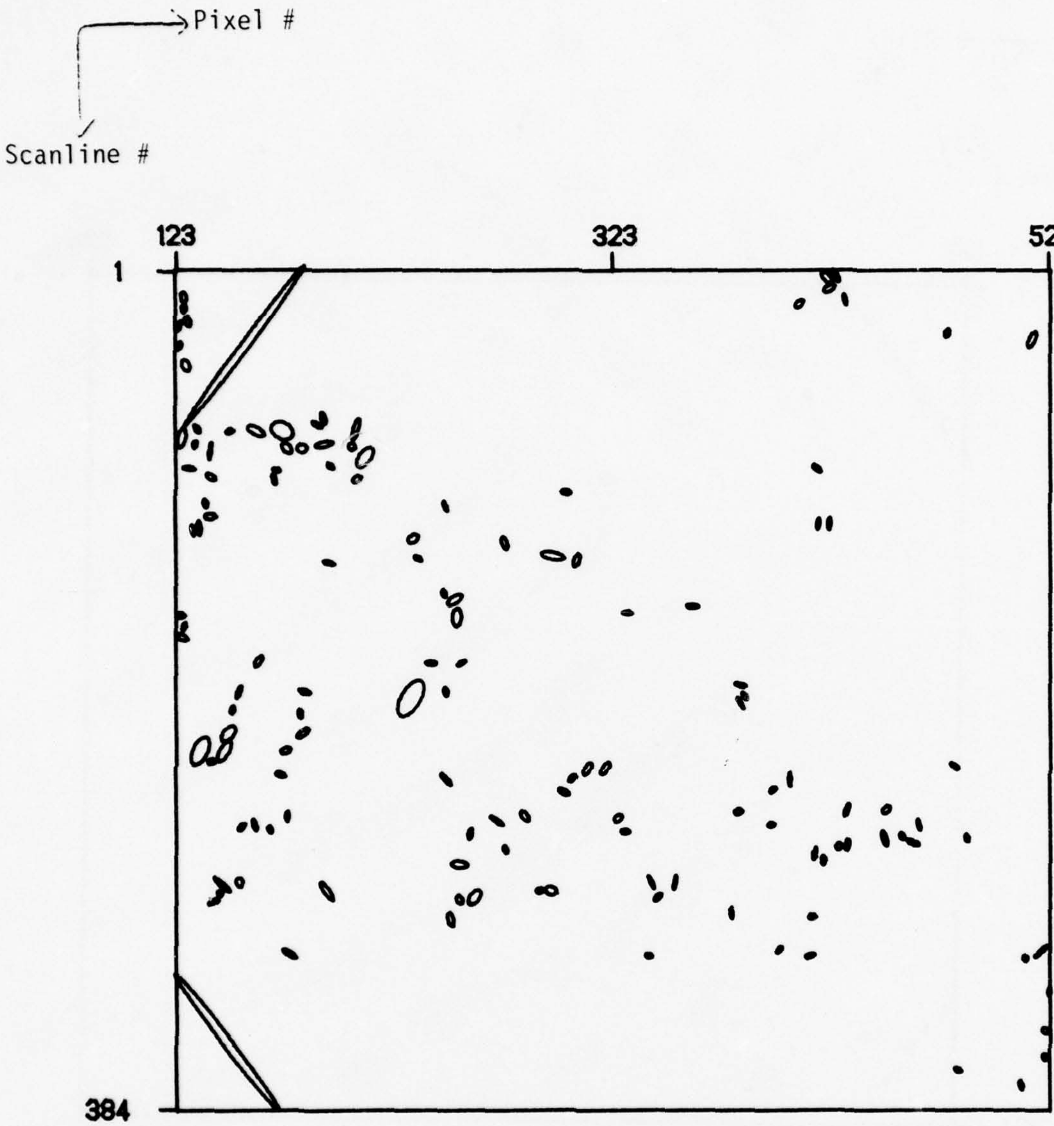
Wavelength = 9.0 - 11.4 μm

FIGURE 30c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



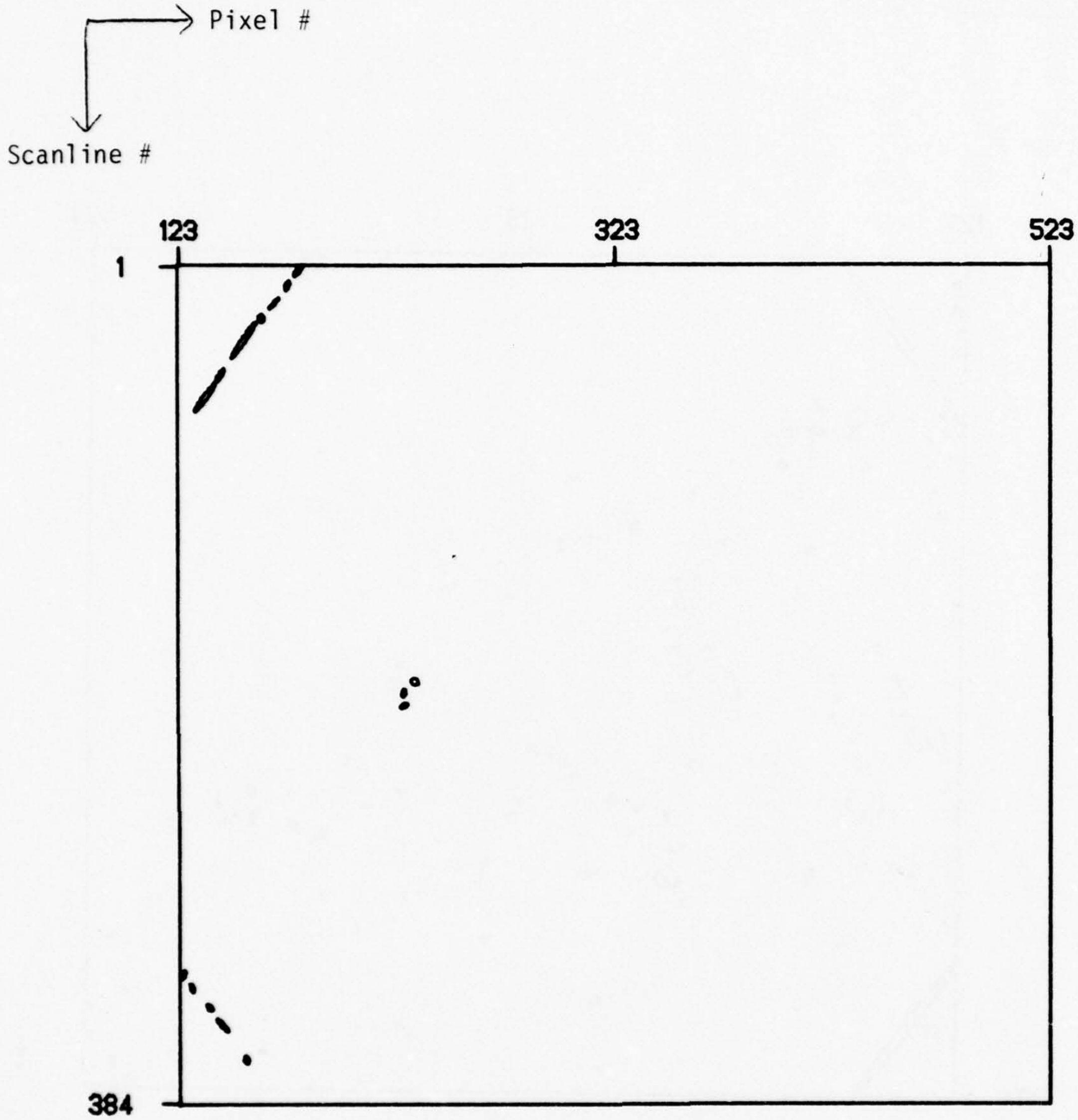
Area: LAND & WATER
Temperature Threshold
= Ave. + 3.66 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 30d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



Area: CONIFERS
Temperature Threshold
= Ave. + 1.71 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 31a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



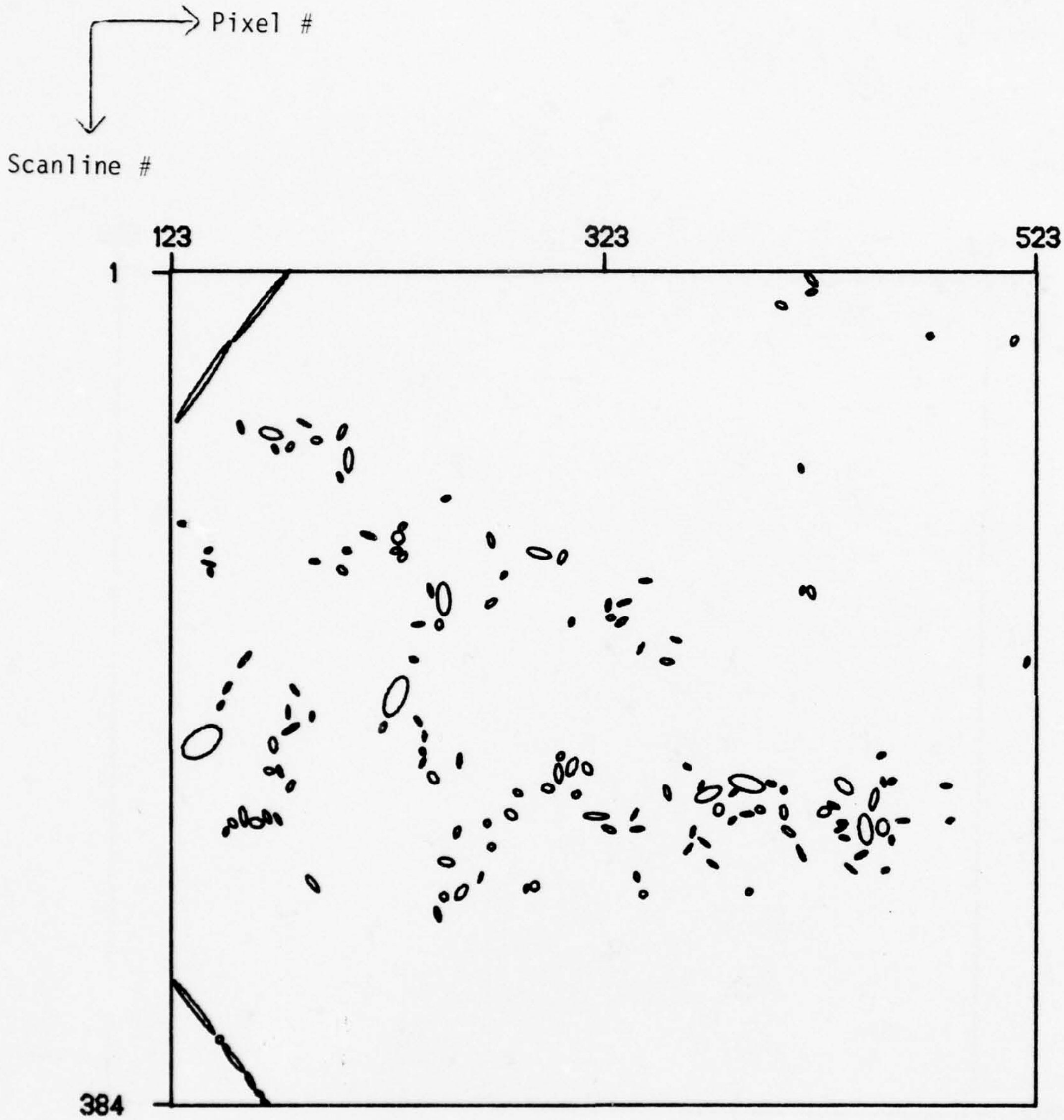
Area: CONIFERS

Temperature Threshold

= Ave. + 3.25 σ

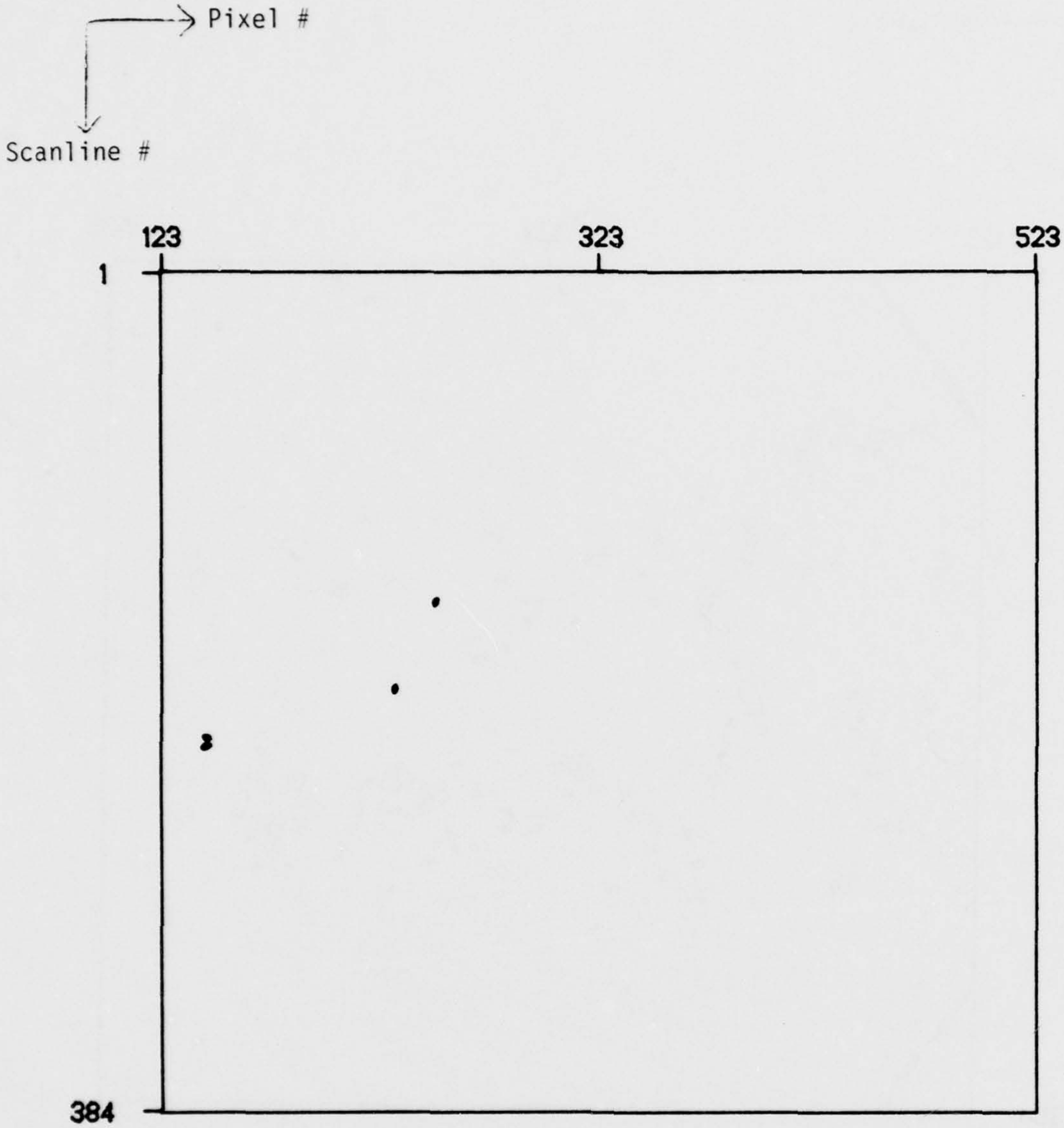
Wavelength = 4.5 - 5.5 μm

FIGURE 31b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



Area: CONIFERS
Temperature Threshold
= Ave. + 1.56 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 31c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



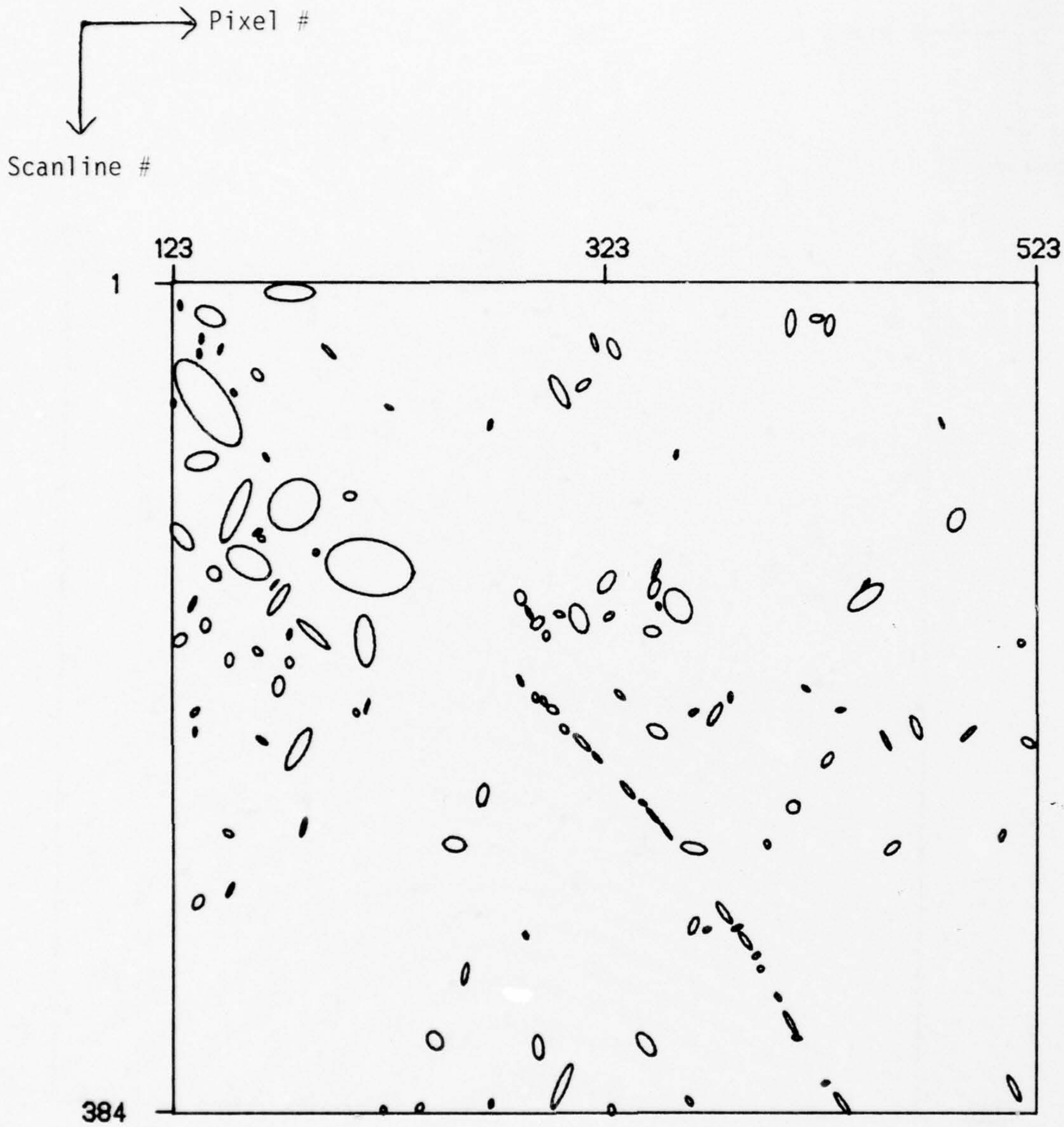
Area: CONIFERS

Temperature Threshold

= Ave. + 3.12 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 31d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - PRE-DAWN



Area: CITY
Temperature Threshold
= Ave. + 2.00 σ
Wavelength = 3.5 - 3.9 μm

FIGURE 32a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON

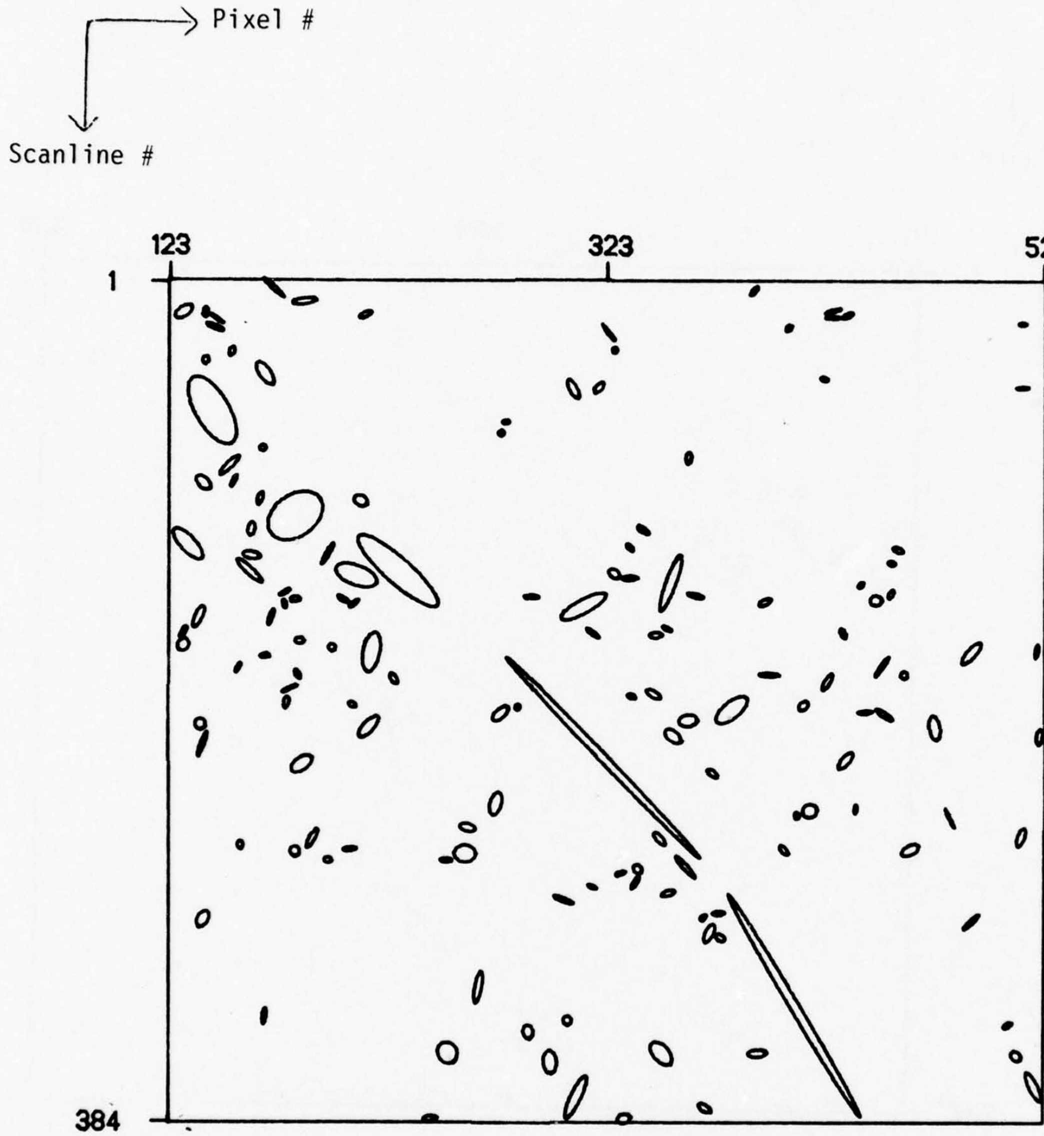
Area: CITY

Temperature Threshold

= Ave. + 3.50 σ

Wavelength = 3.5 - 3.9 μm

FIGURE 32b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: CITY

Temperature Threshold

= Ave. + 2.53 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 32c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON

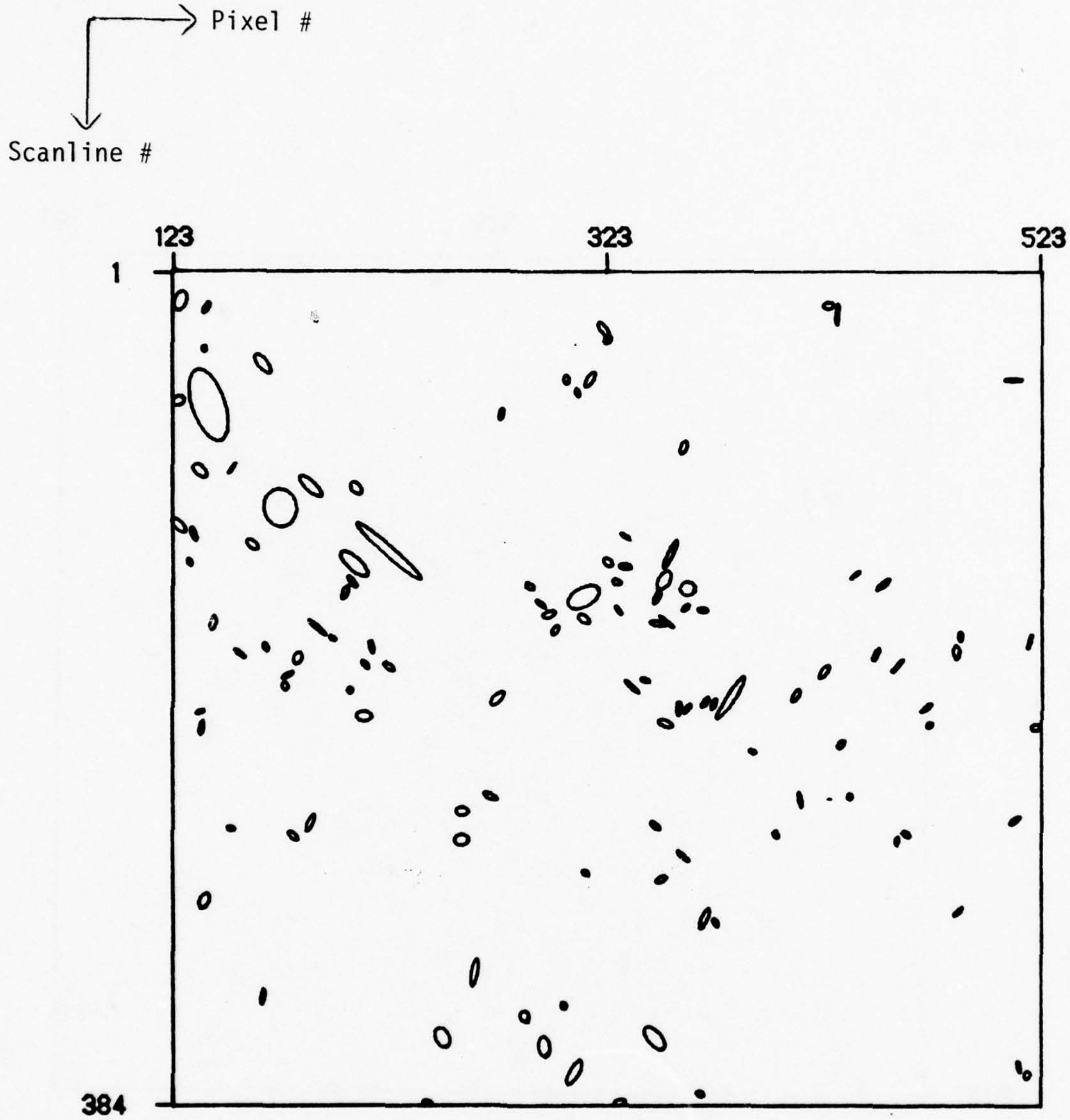
Area: CITY

Temperature Threshold

= Ave. + 3.29 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 32d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



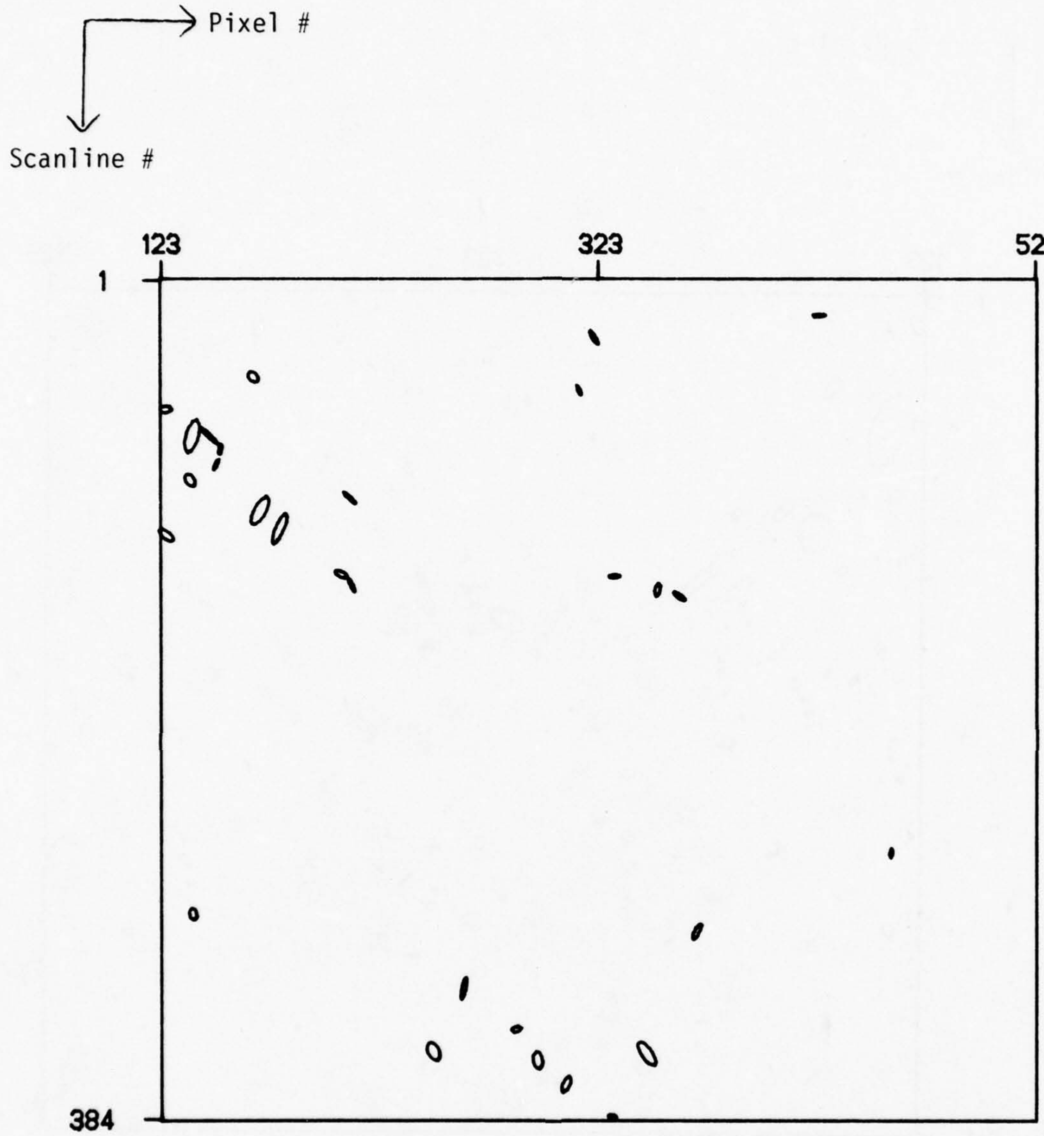
Area: CITY

Temperature Threshold

= Ave. + 2.82 σ

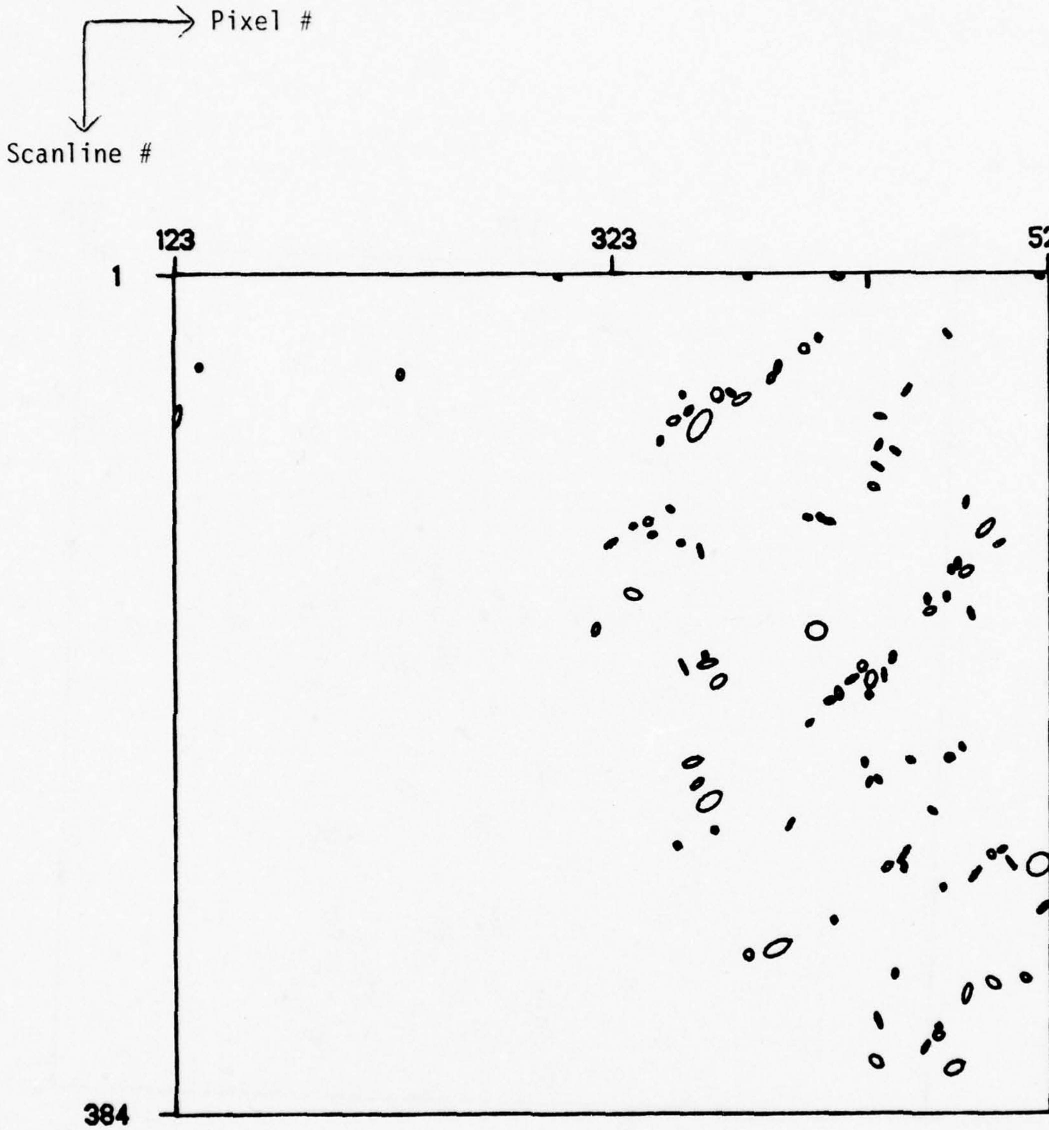
Wavelength = 9.0 - 11.4 μm

FIGURE 32e. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



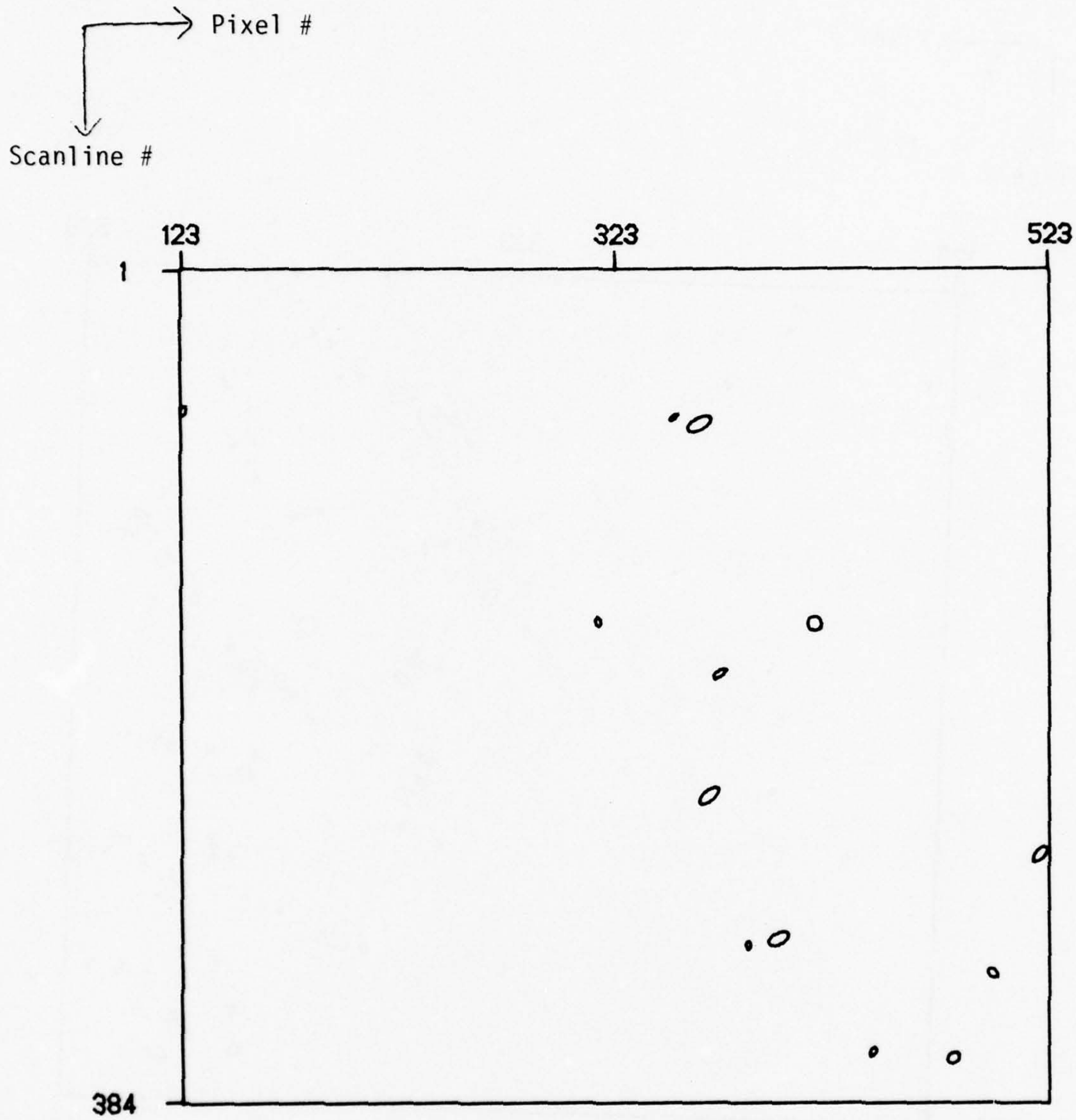
Area: CITY
Temperature Threshold
= Ave. + 3.57 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 32f. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: LAND & WATER
Temperature Threshold
= Ave. + 1.83 σ
Wavelength = 3.5 - 3.9 μm

FIGURE 33a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



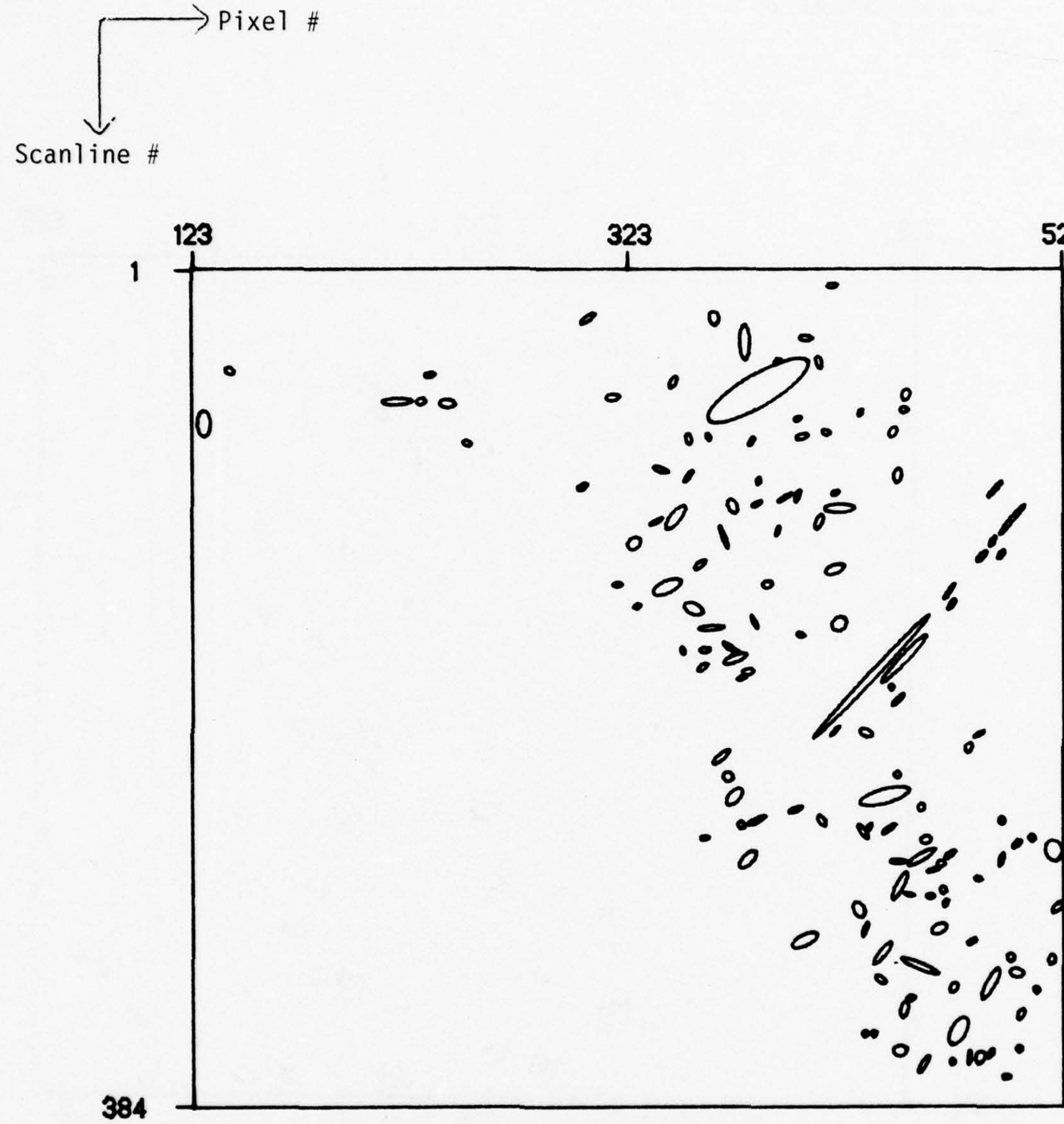
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.00 σ

Wavelength = 3.5 - 3.9 μm

FIGURE 33b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



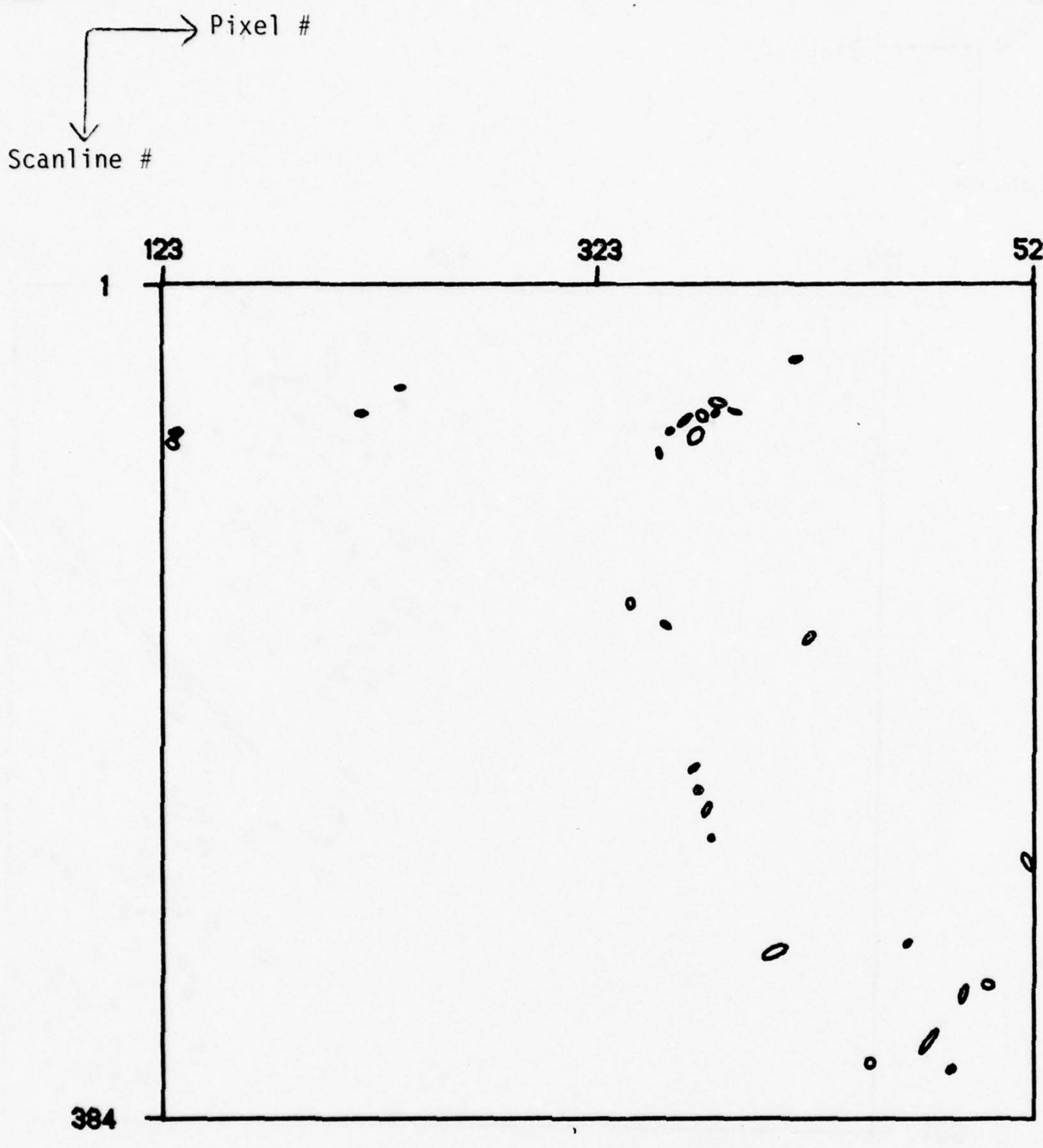
Area: LAND & WATER

Temperature Threshold

= Ave. + 2.50 σ

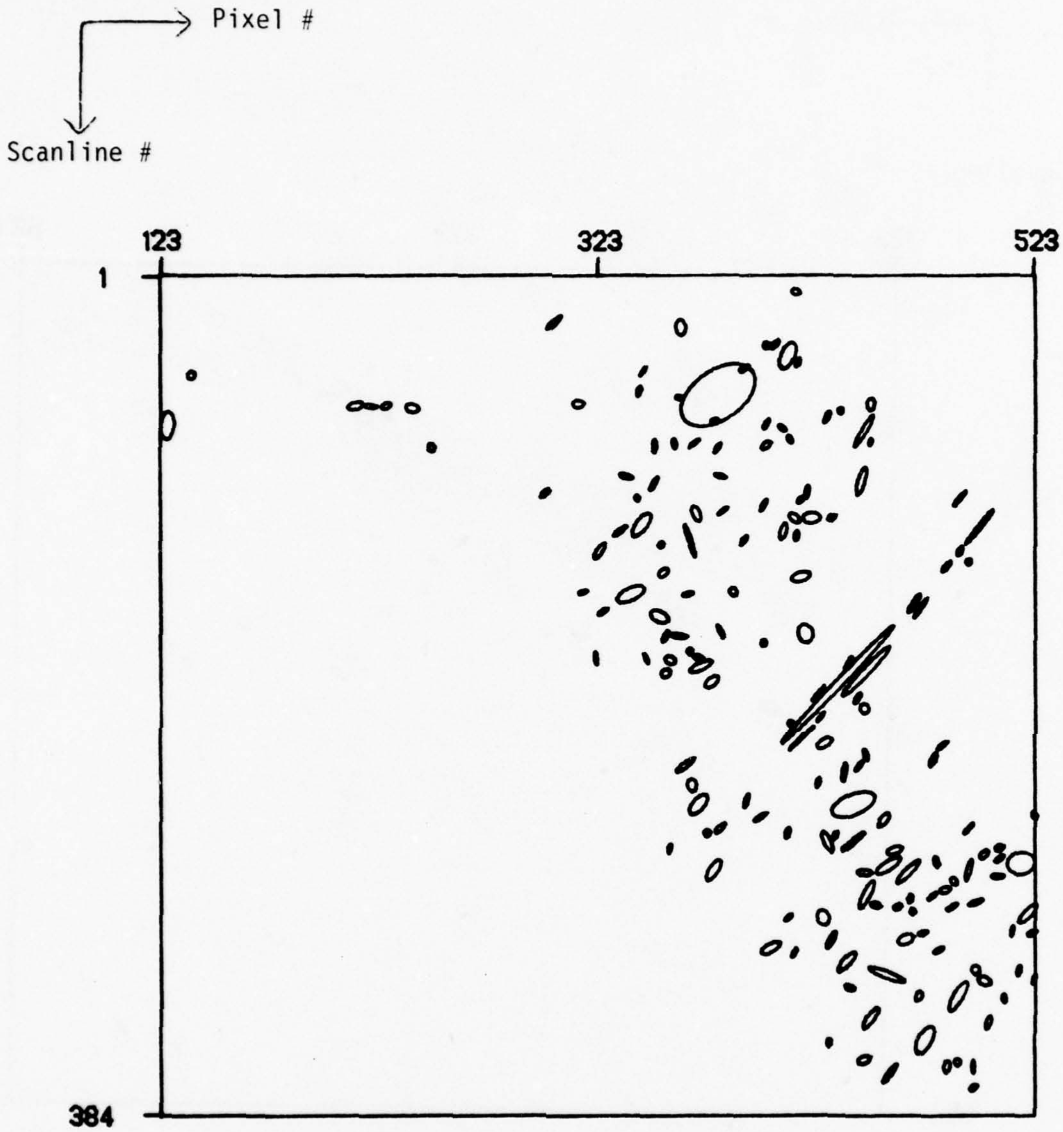
Wavelength = 4.5 - 5.5 μm

FIGURE 33c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: LAND & WATER
Temperature Threshold
= Ave. + 4.15 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 33d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: LAND & WATER

Temperature Threshold

= Ave. + 2.35 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 33e. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON

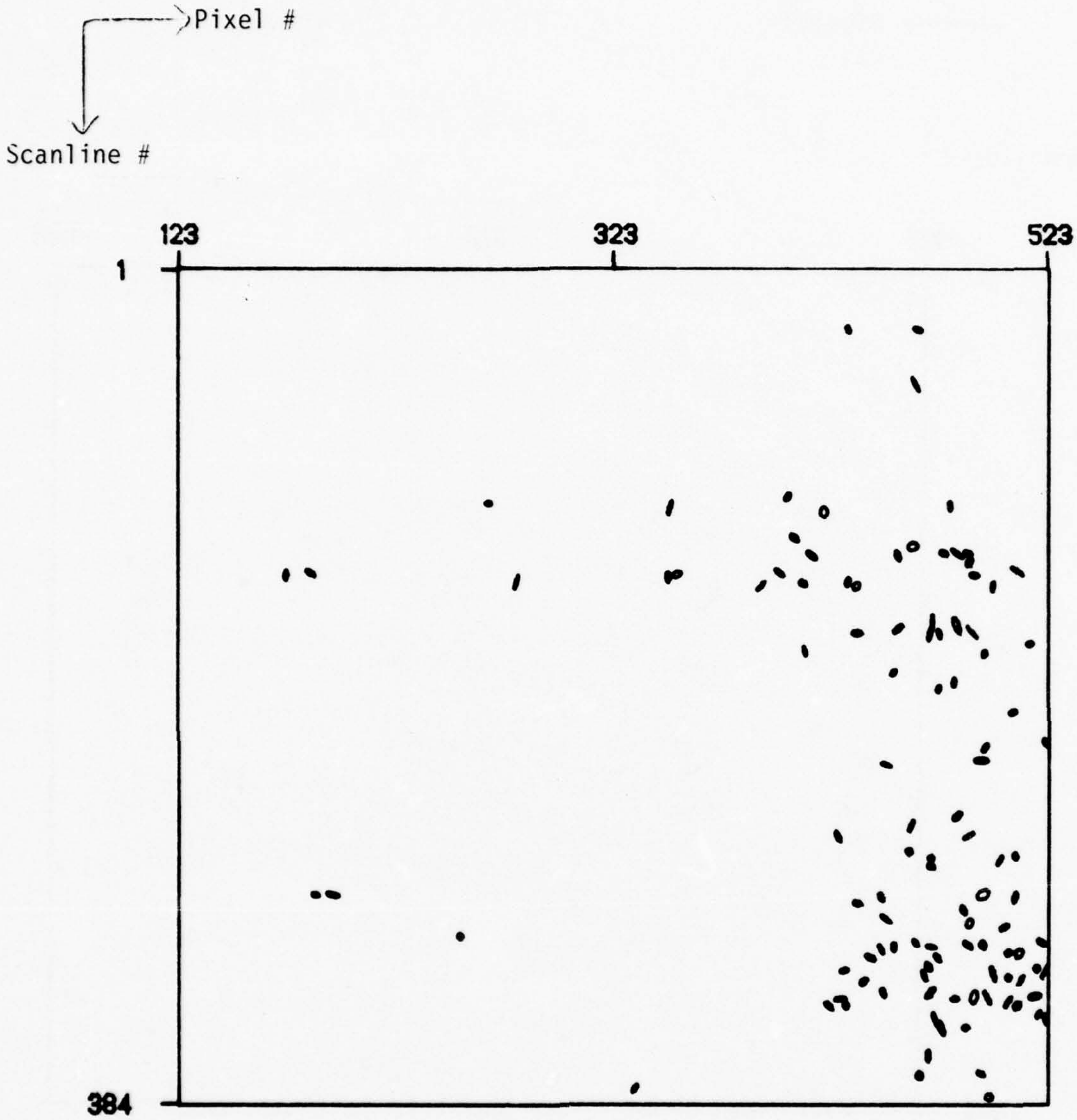
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.79 σ

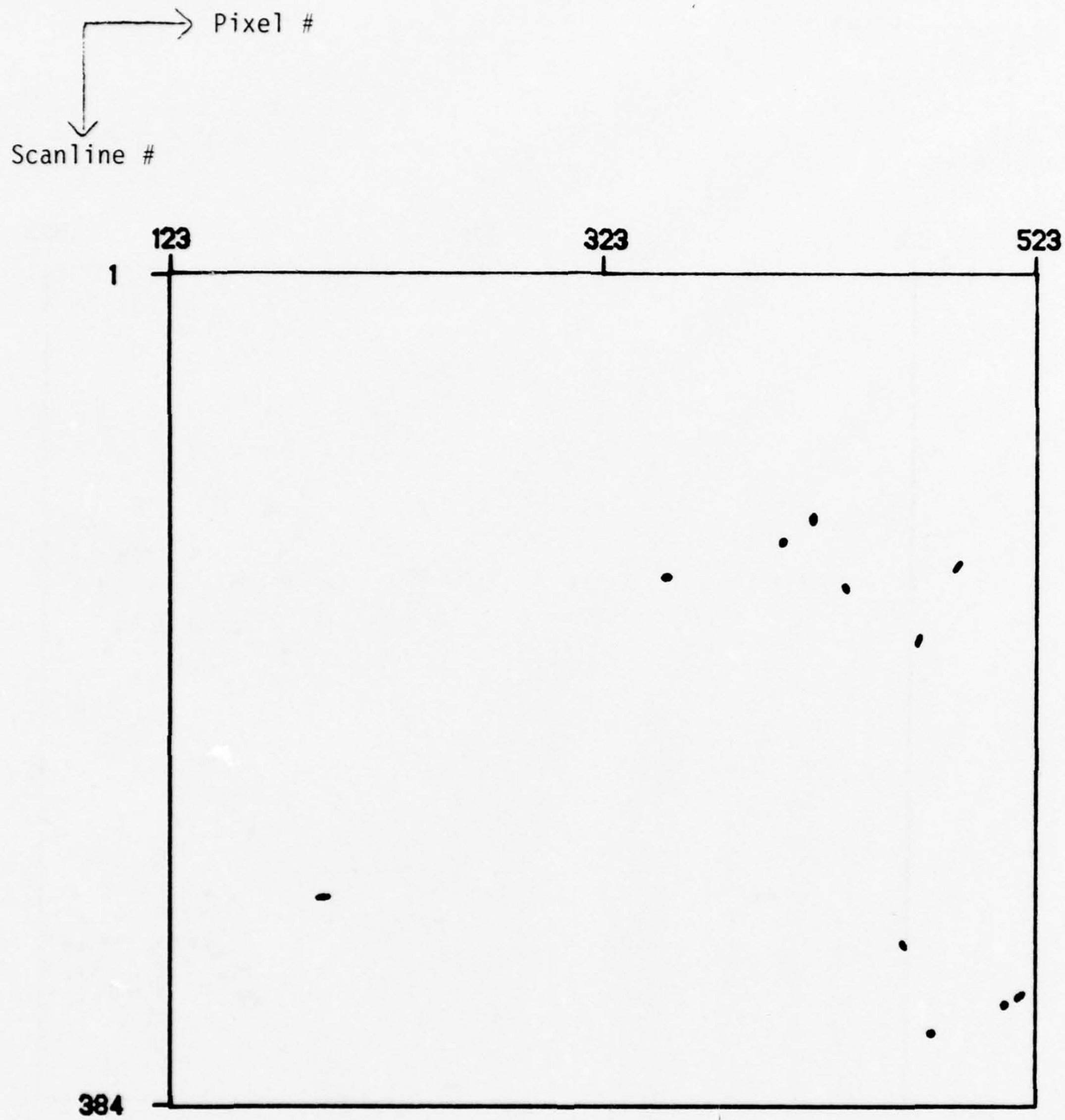
Wavelength = 9.0 - 11.4 μm

FIGURE 33f. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



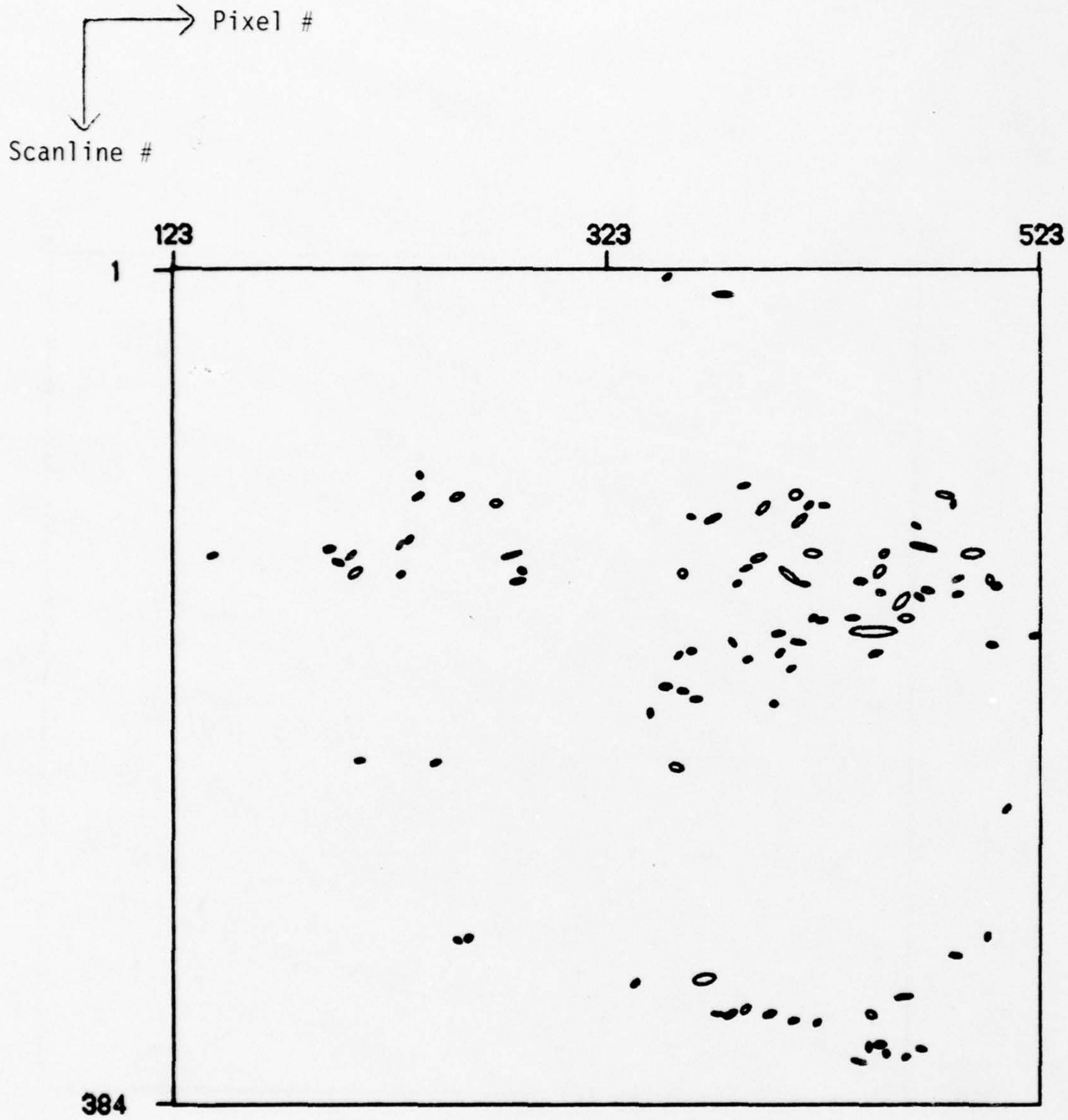
Area: CONIFERS
Temperature Threshold
= Ave. + 1.65 σ
Wavelength = 3.5 - 3.9 μm

FIGURE 34a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: CONIFERS
Temperature Threshold
= Ave. + 2.00 σ
Wavelength = 3.5 - 3.9 μm

FIGURE 34b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



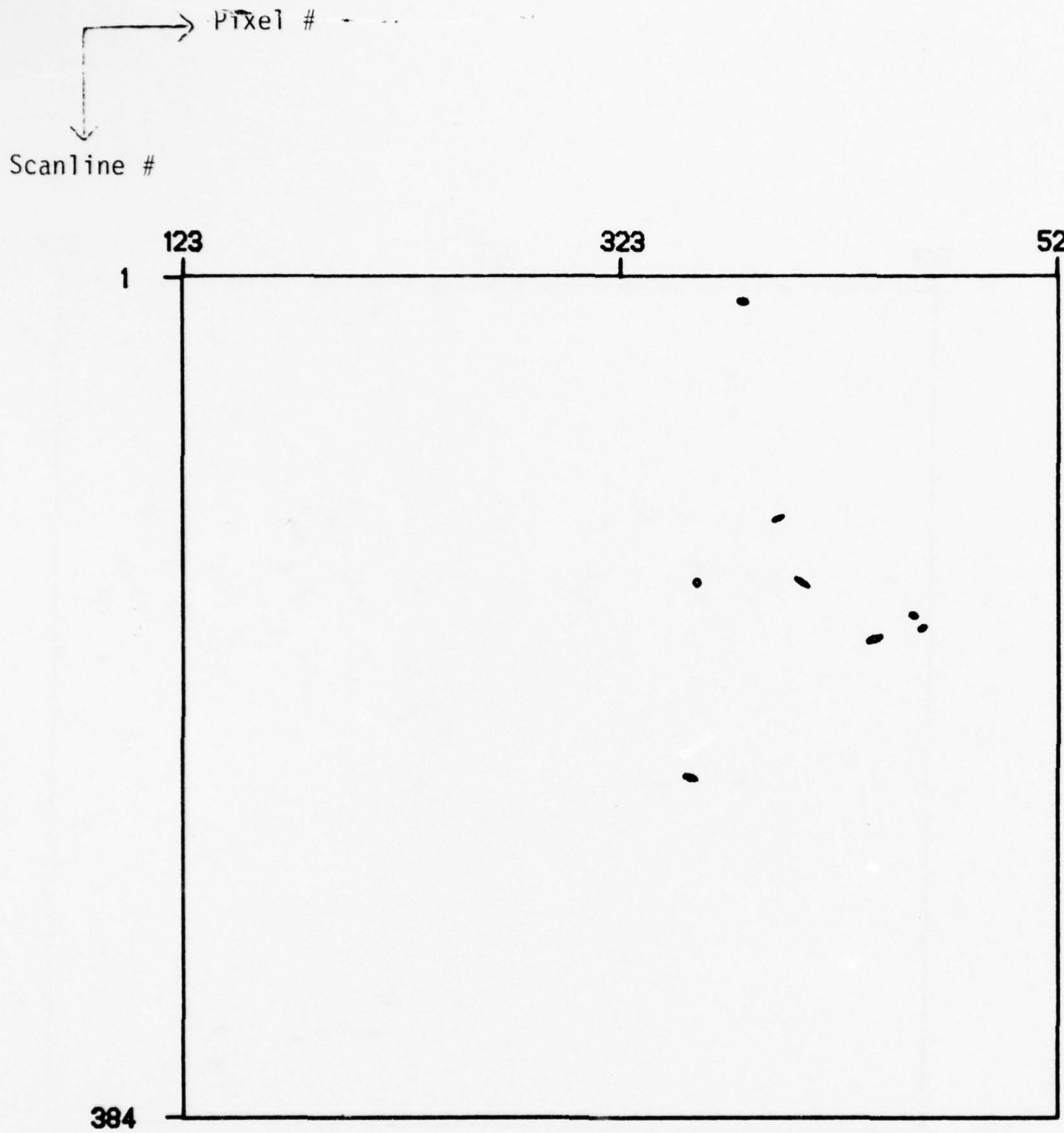
Area: CONIFERS

Temperature Threshold

= Ave. + 2.17 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 34c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



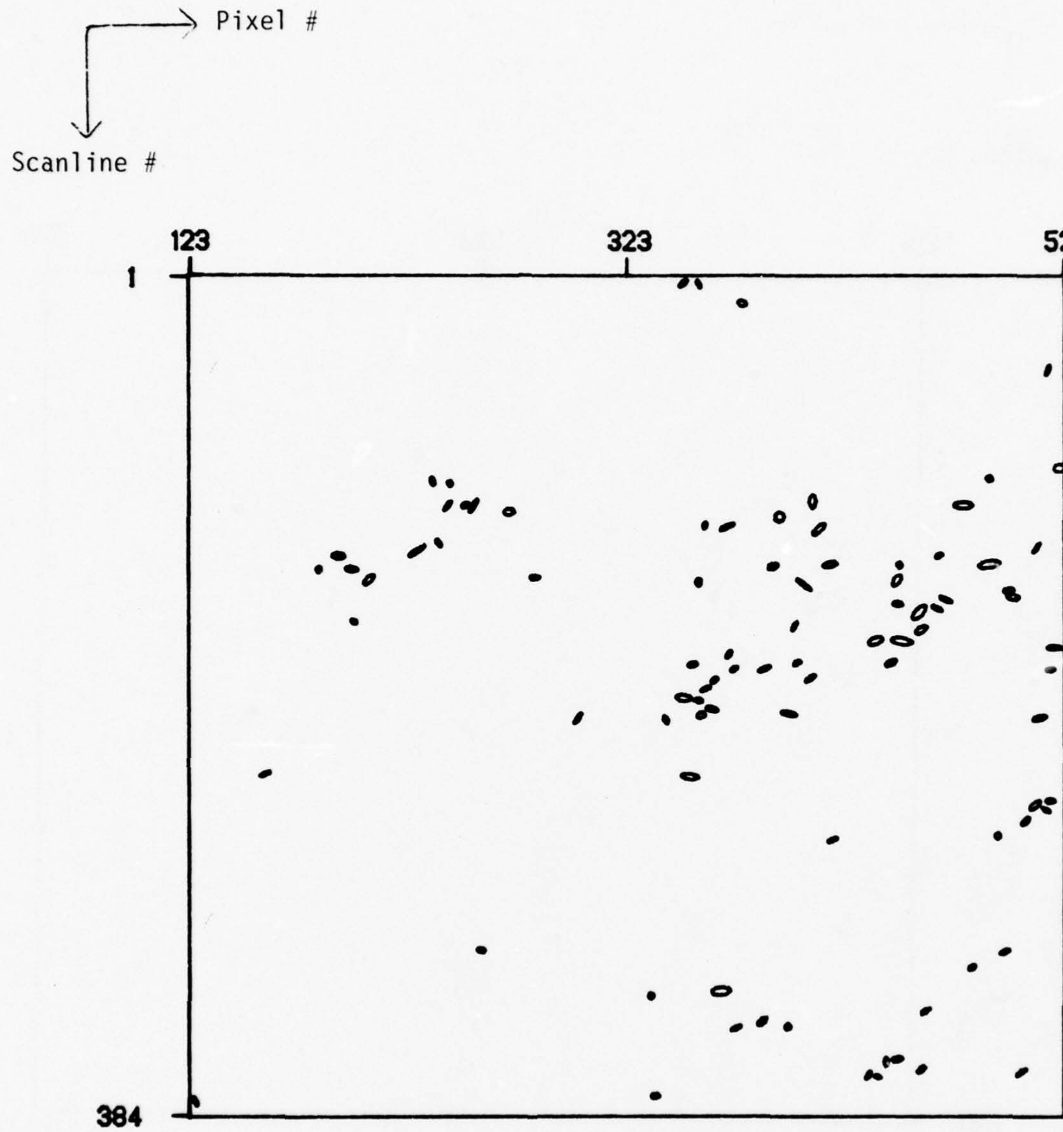
Area: CONIFERS

Temperature Threshold

= Ave. + 2.79 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 34d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



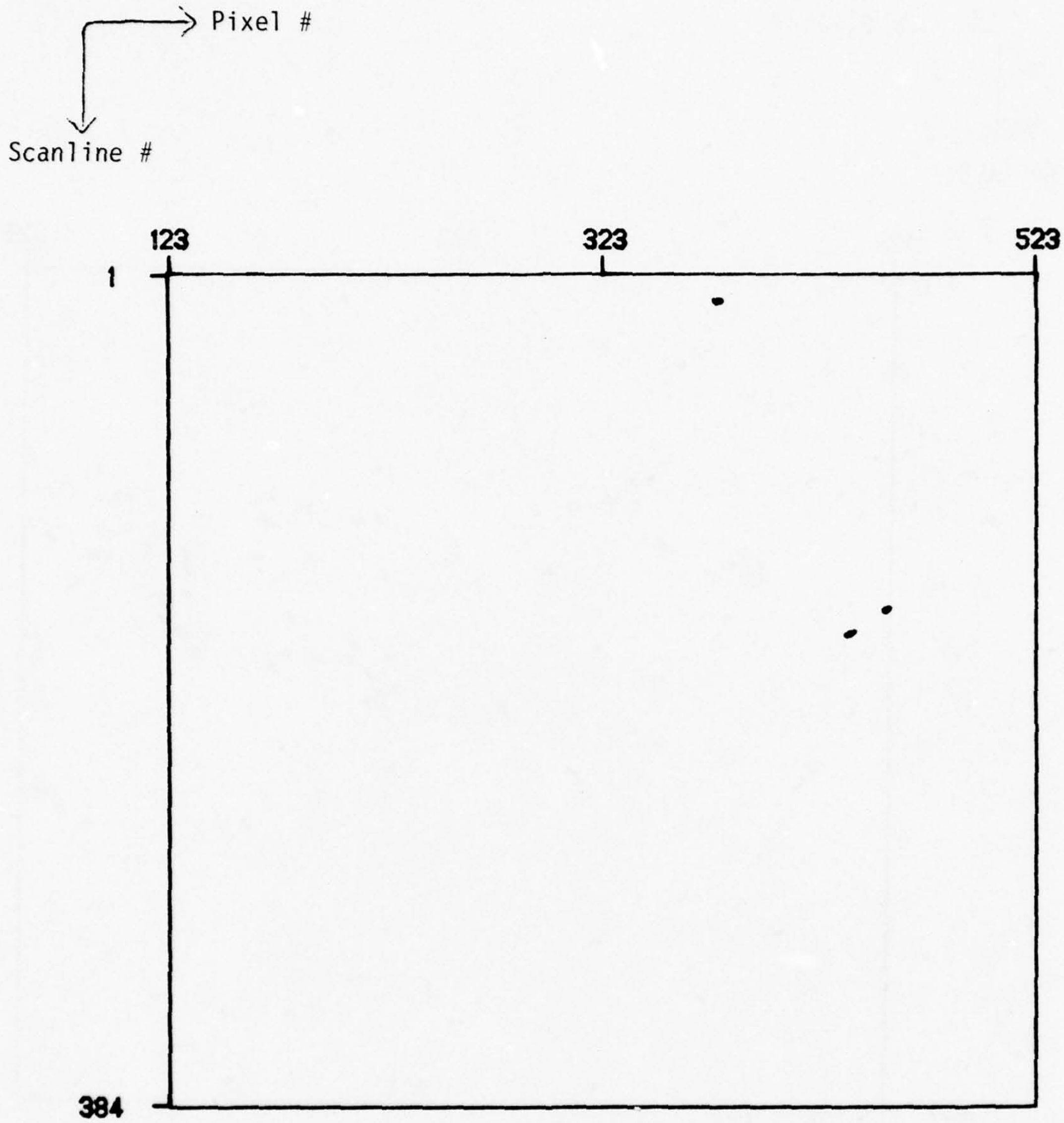
Area: CONIFERS

Temperature Threshold

= Ave. + 2.07 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 34e. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



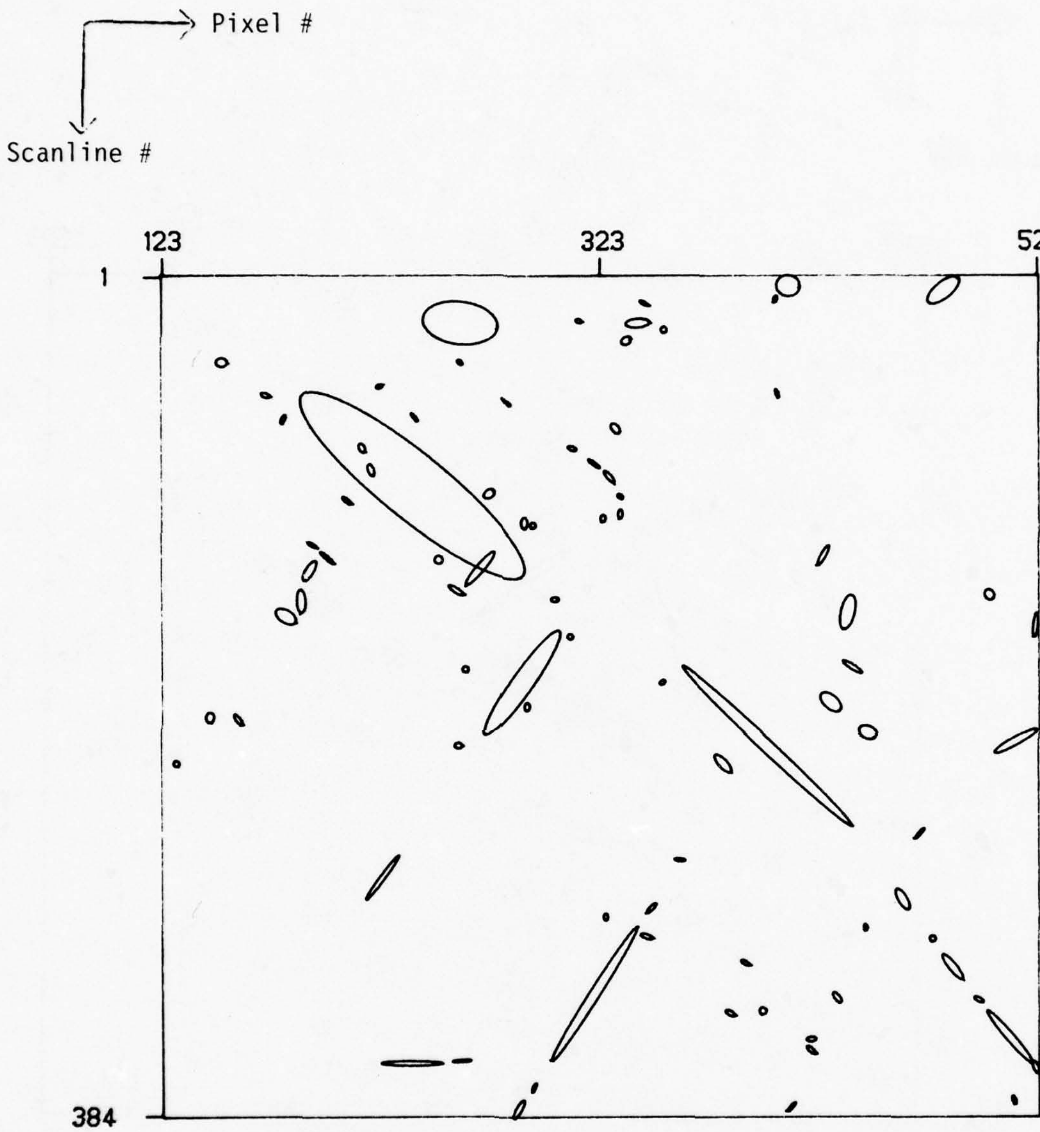
Area: CONIFERS

Temperature Threshold

= Ave. + 2.71 σ

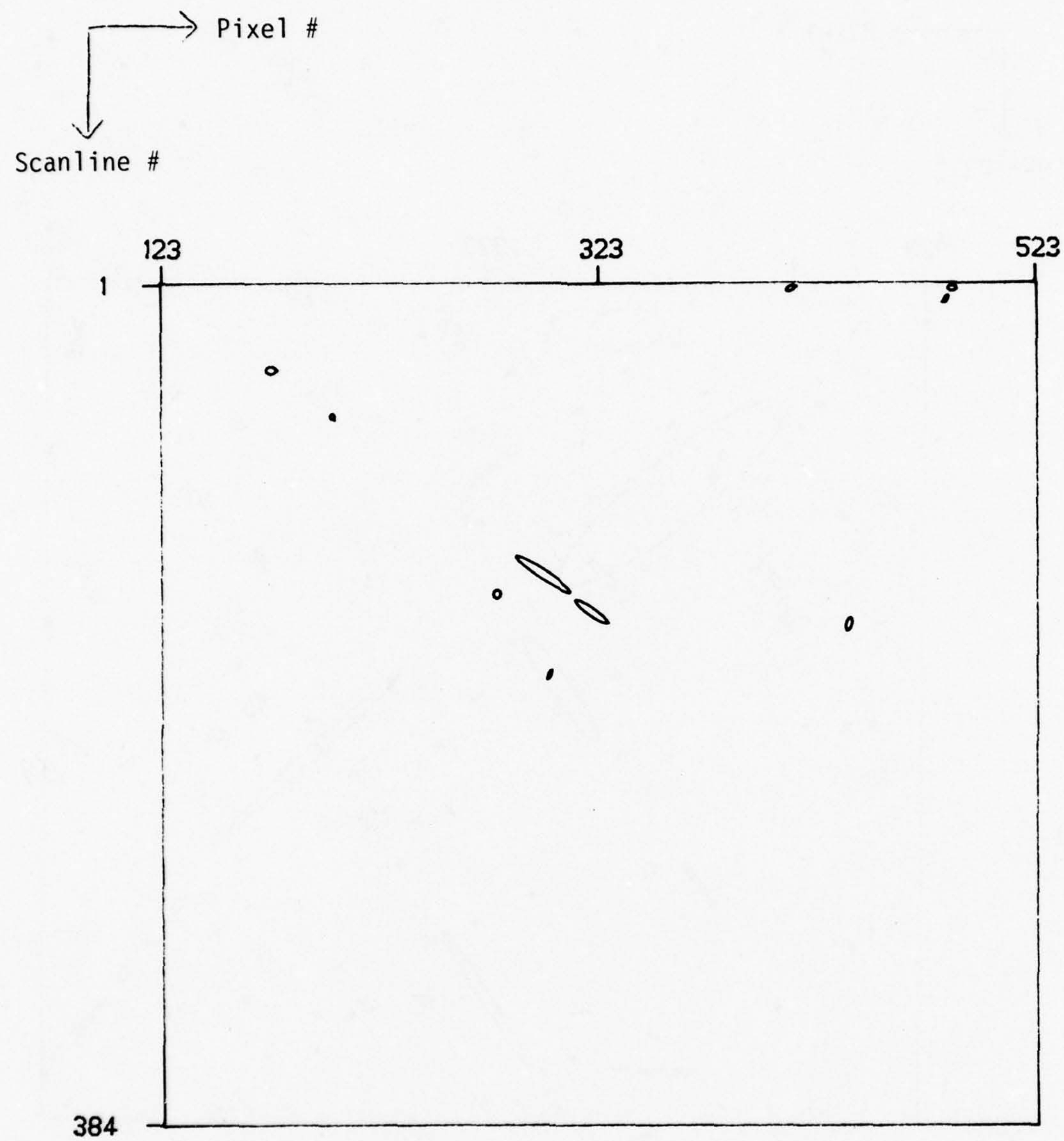
Wavelength = 9.0 - 11.4 μm

FIGURE 34f. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - NOON



Area: CITY
Temperature Threshold
= Ave. + 2.00 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 35a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



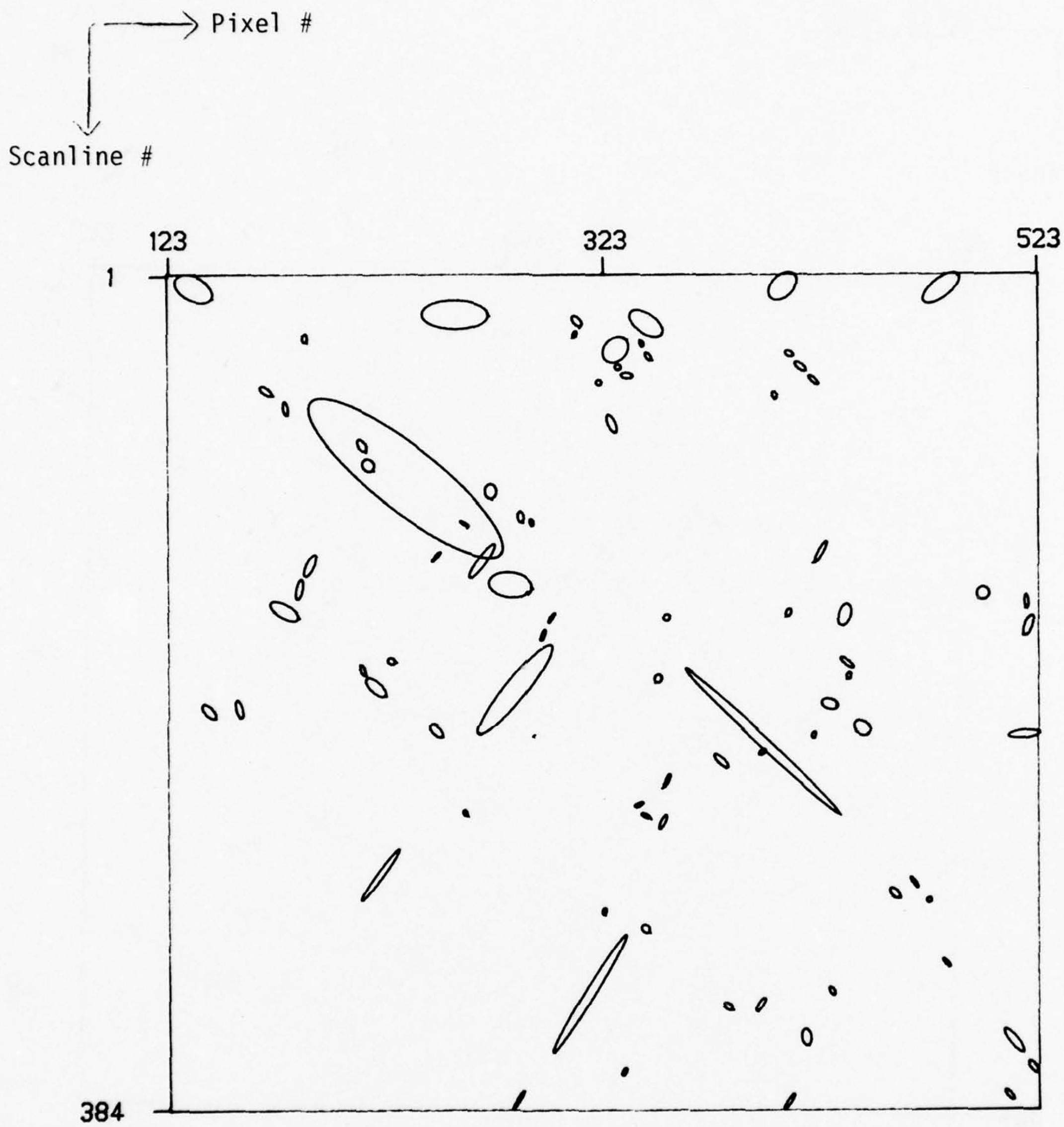
Area: CITY

Temperature Threshold

= Ave. + 3.71 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 35b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



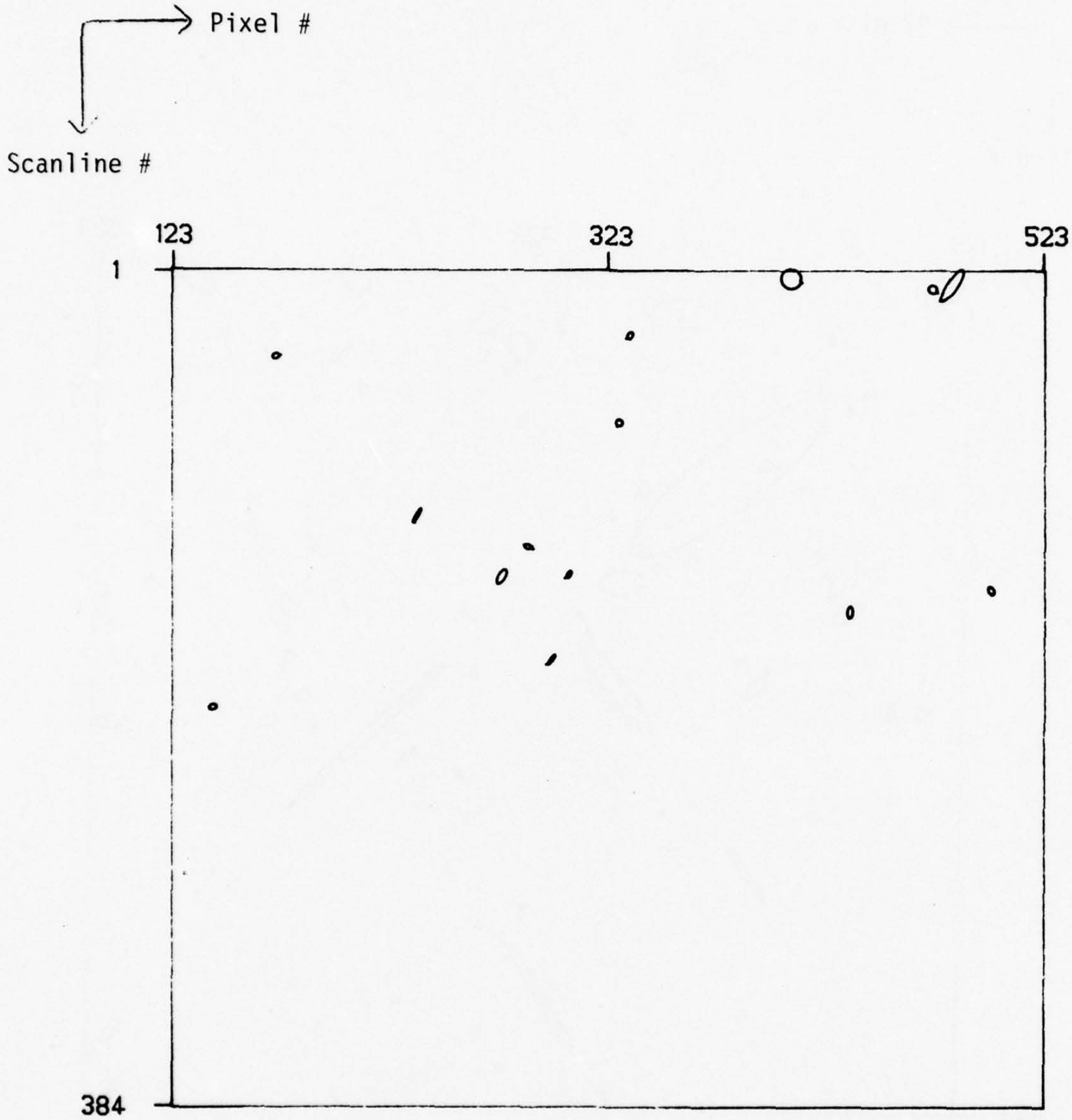
Area: CITY

Temperature Threshold

= Ave. + 1.69 σ

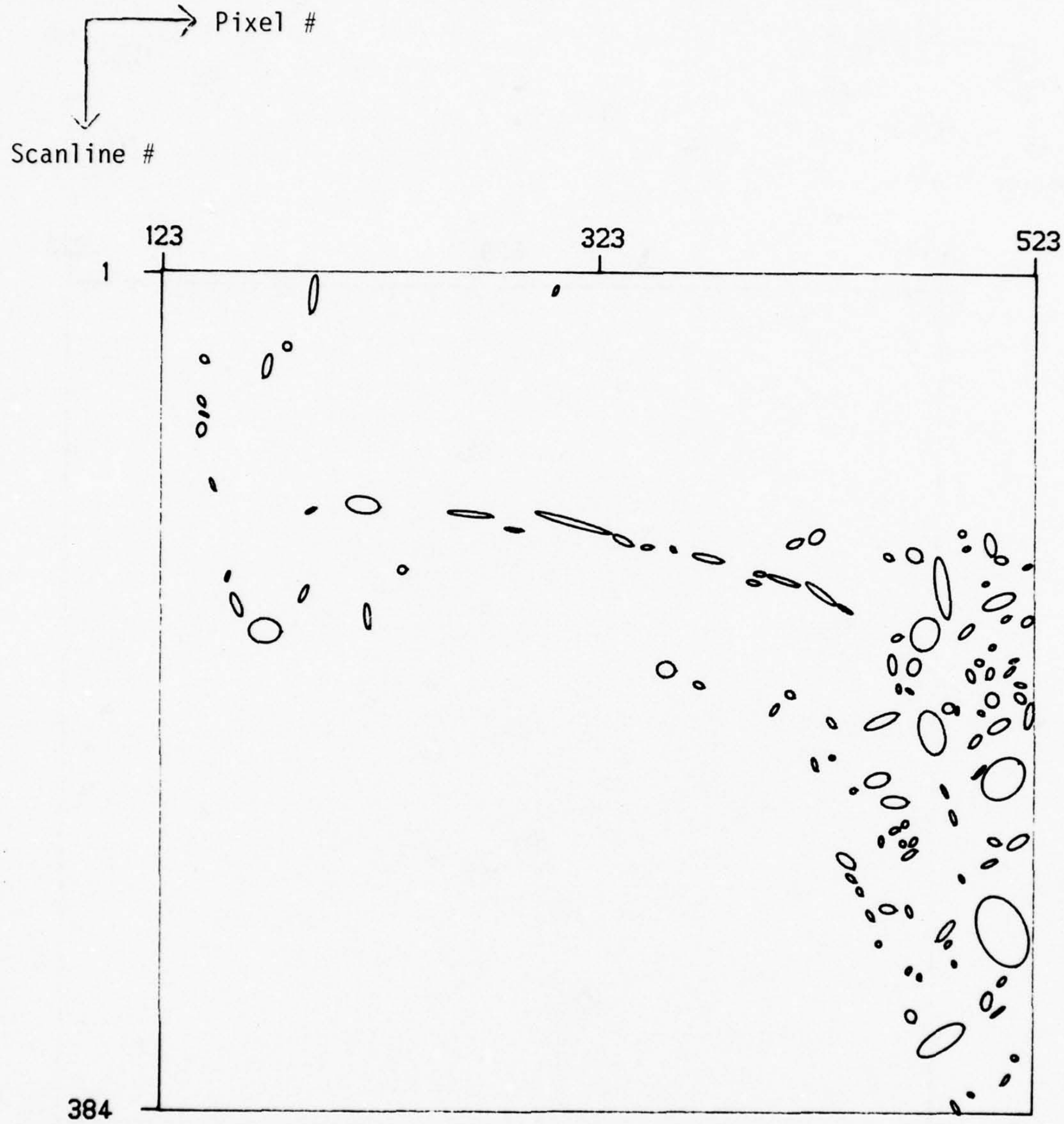
Wavelength = 9.0 - 11.4 μm

FIGURE 35c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



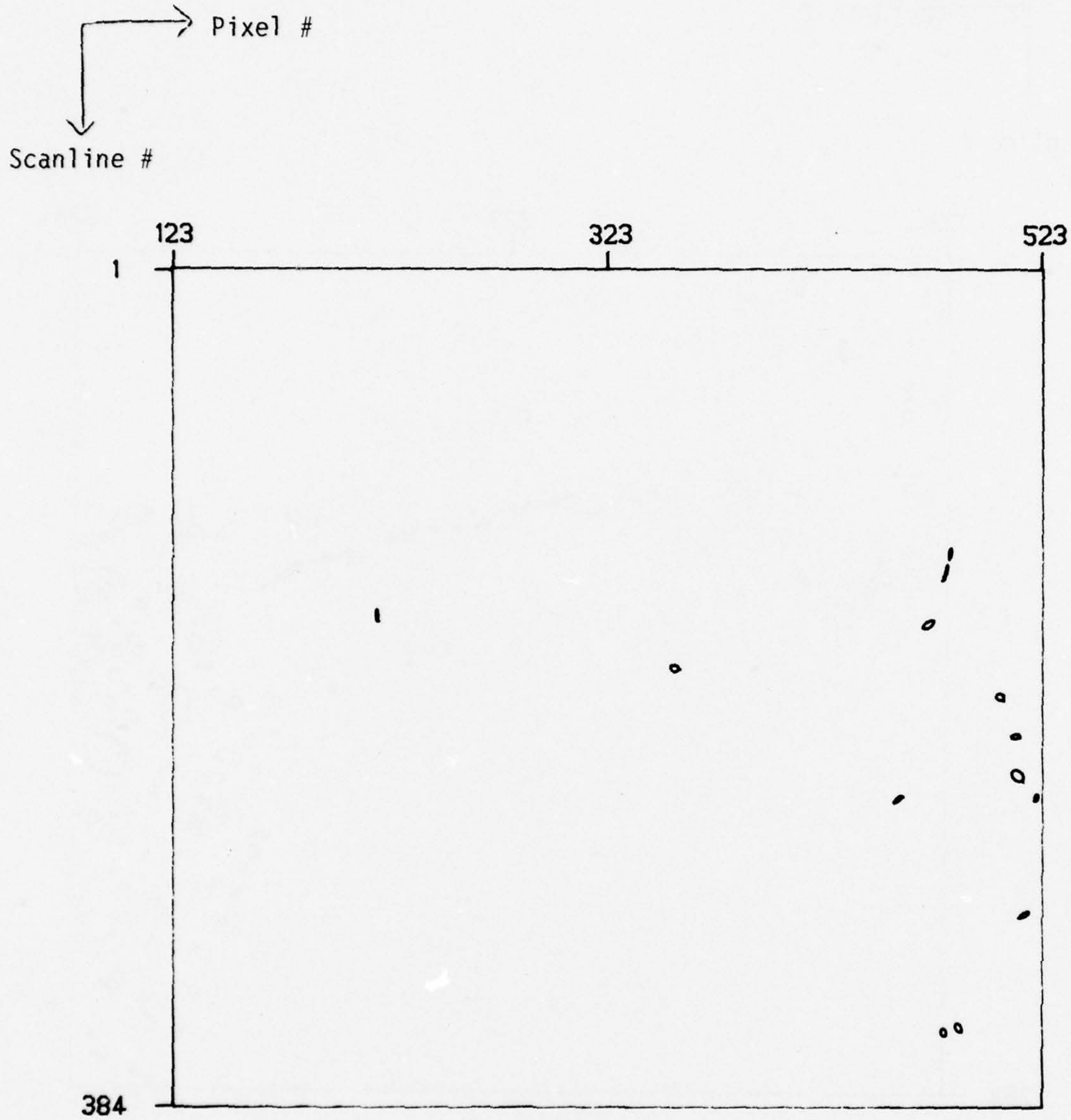
Area: CITY
Temperature Threshold
= Ave. + 3.00 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 35d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



Area: LAND & WATER
Temperature Threshold
= Ave. + 2.00 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 36a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



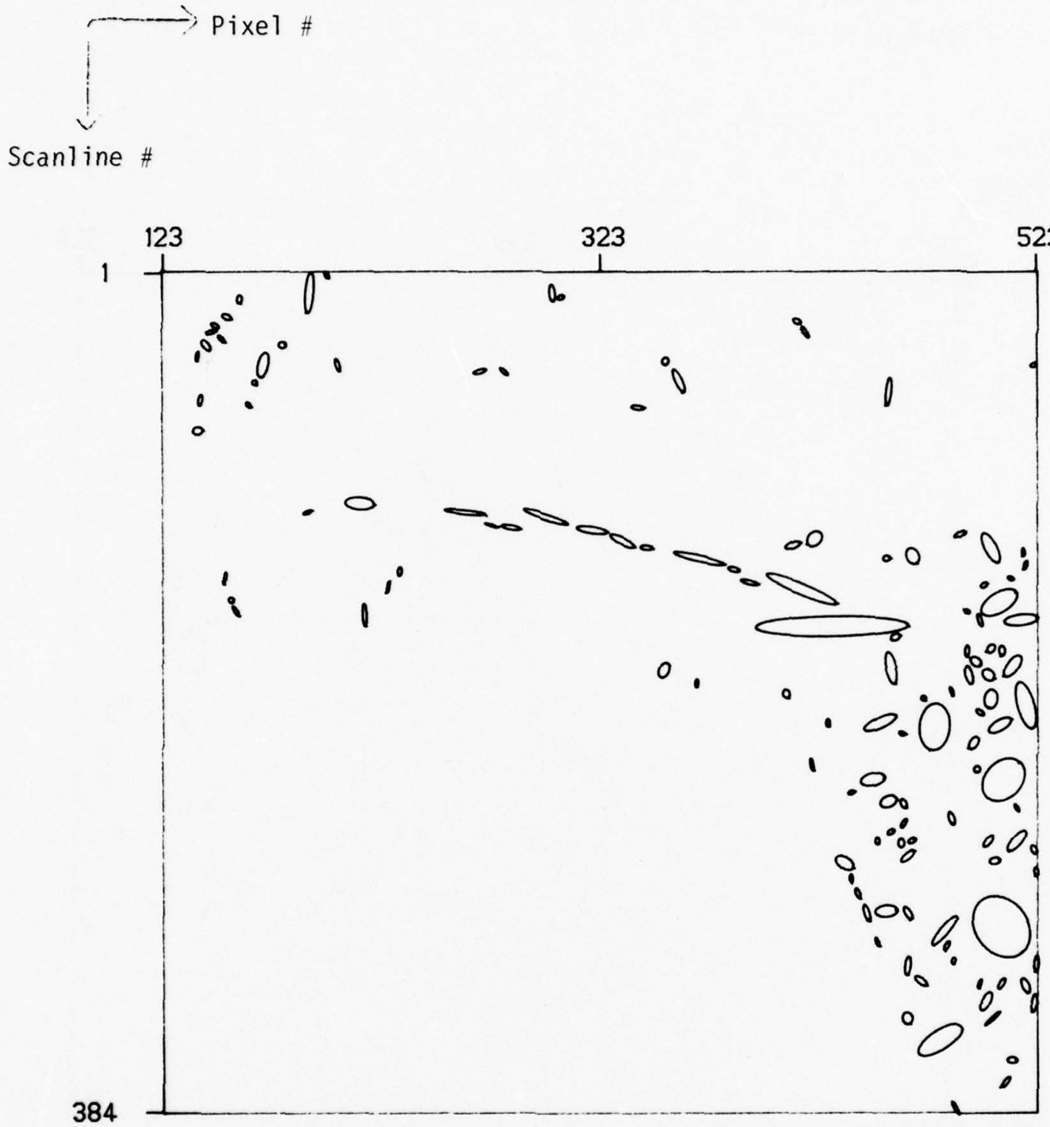
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.50 σ

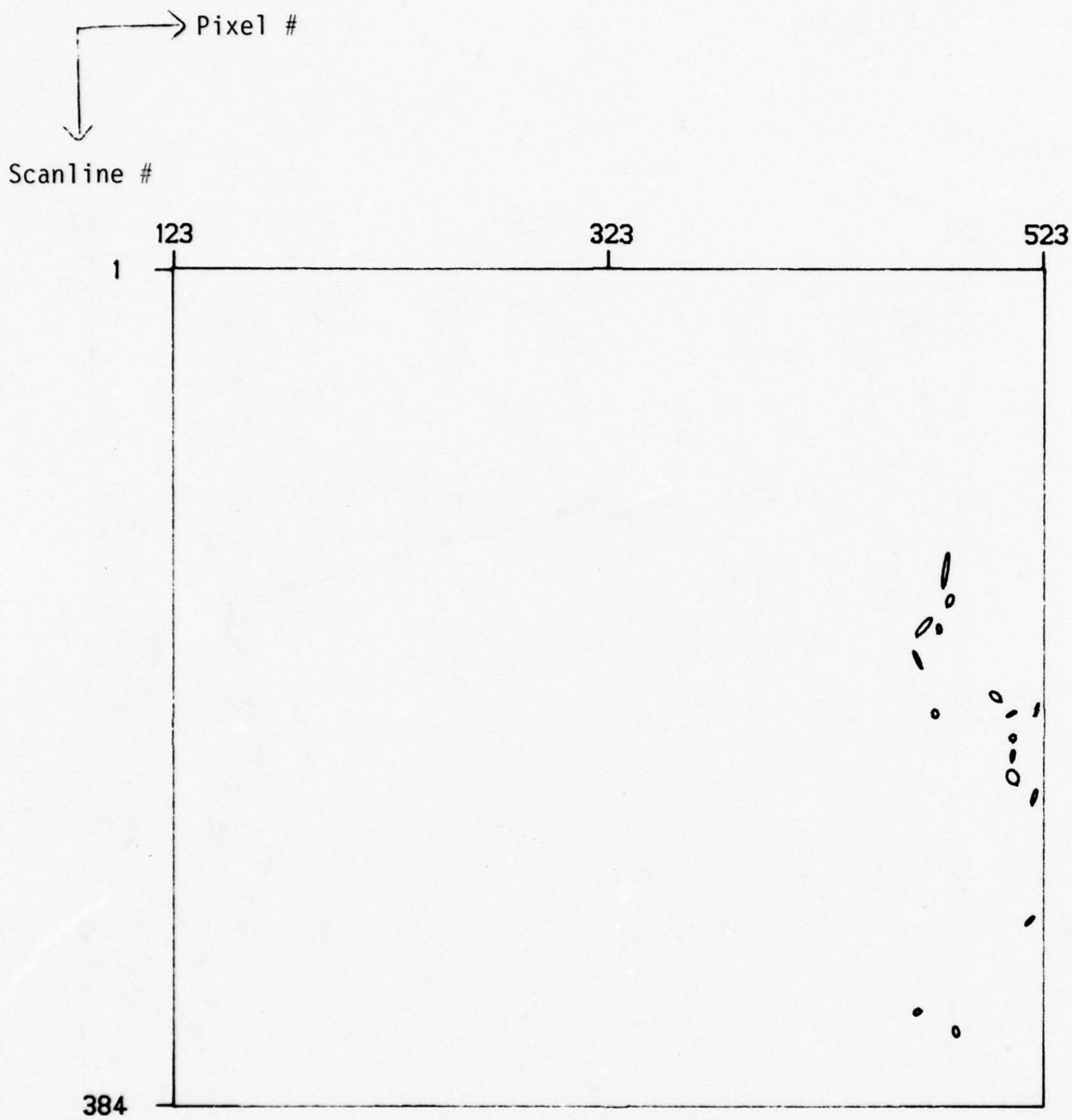
Wavelength = 4.5 - 5.5 μm

FIGURE 36b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



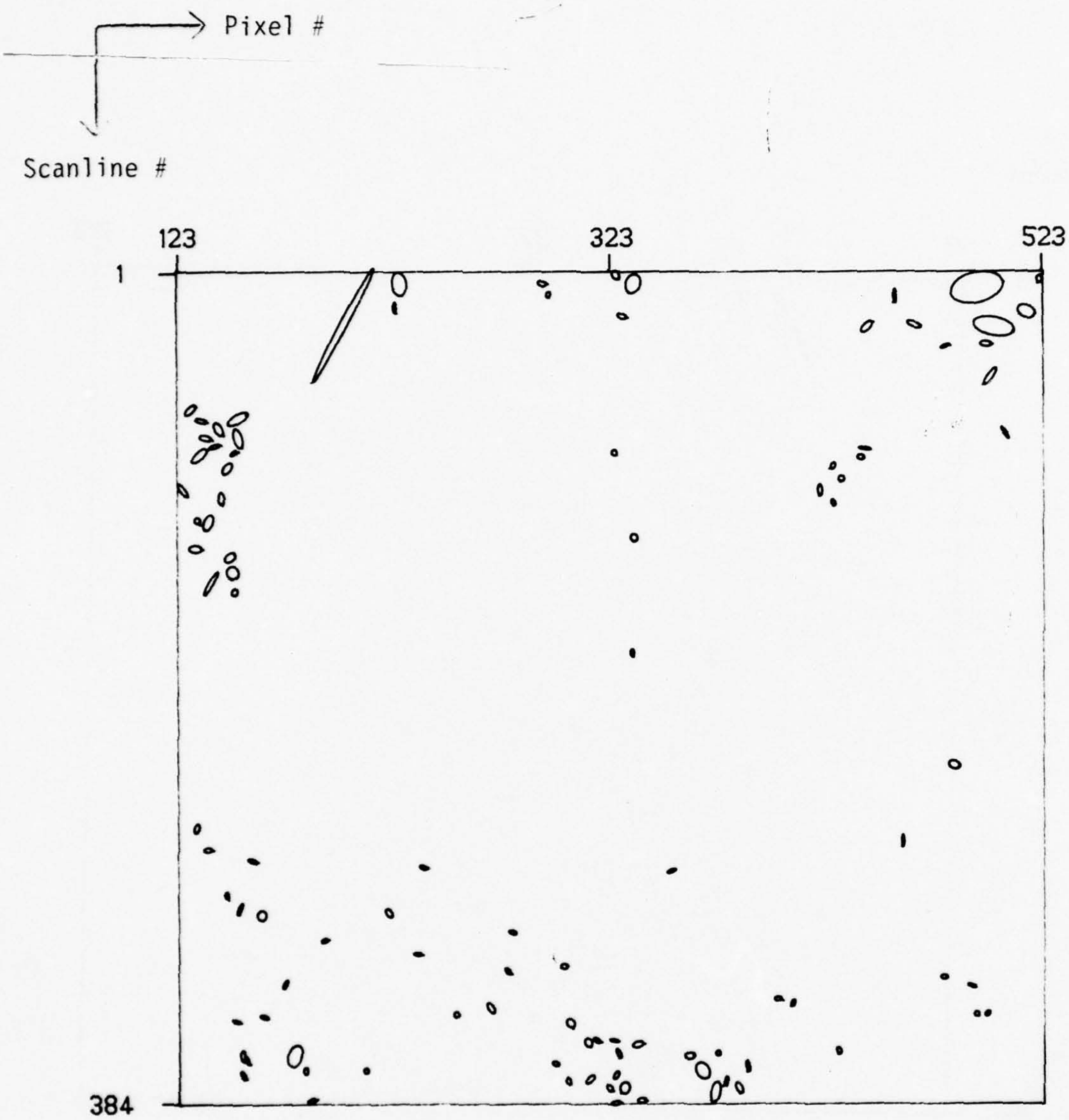
Area: LAND & WATER
Temperature Threshold
= Ave. + 1.26 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 36c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



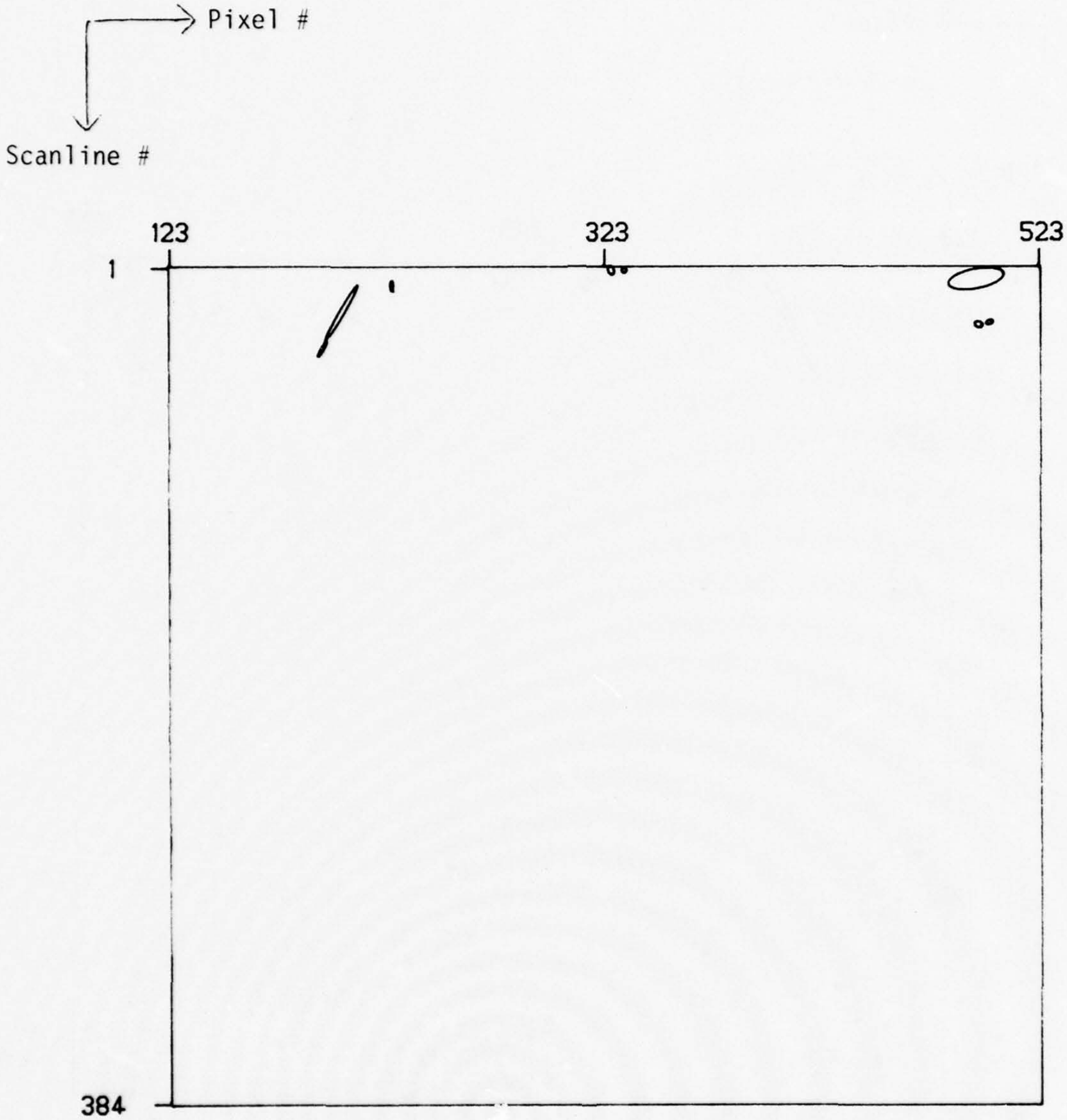
Area: LAND & WATER
Temperature Threshold
= Ave. + 3.00 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 36d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



Area: CONIFERS
Temperature Threshold
= Ave. + 2.00 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 37a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



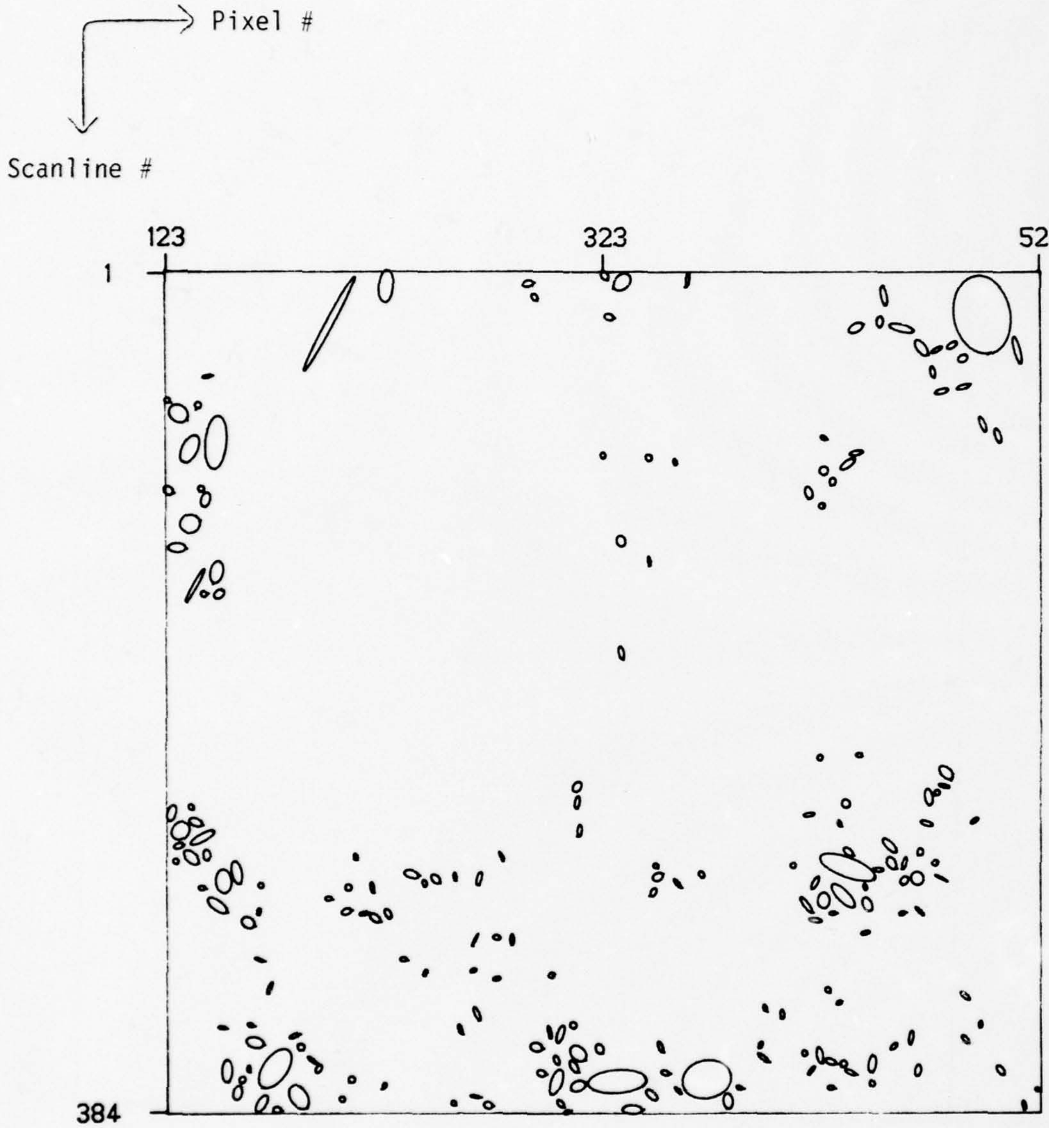
Area: CONIFERS

Temperature Threshold

= Ave. + 3.24 σ

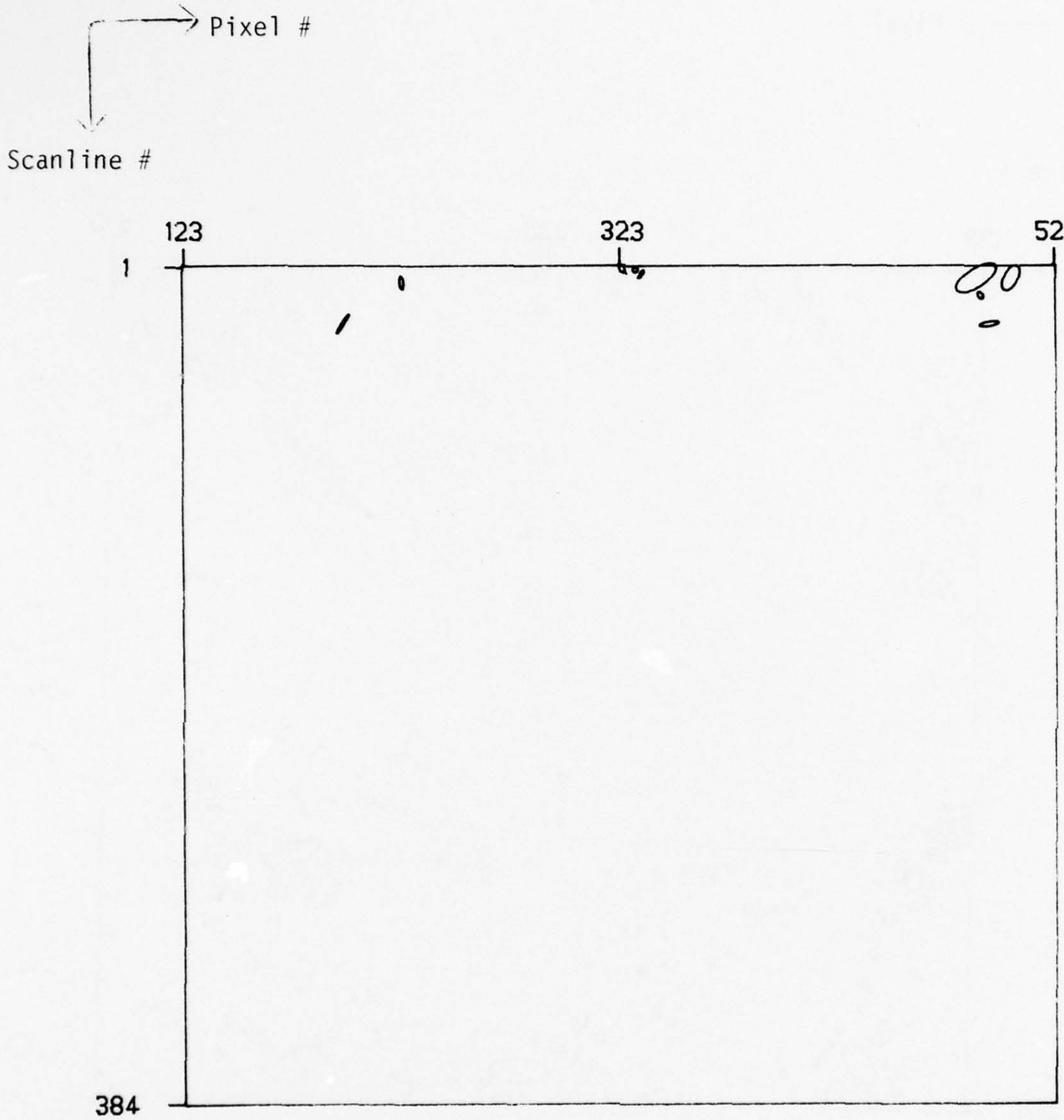
Wavelength = 4.5 - 5.5 μm

FIGURE 37b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



Area: CONIFERS
Temperature Threshold
= Ave. + 1.50 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 37c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



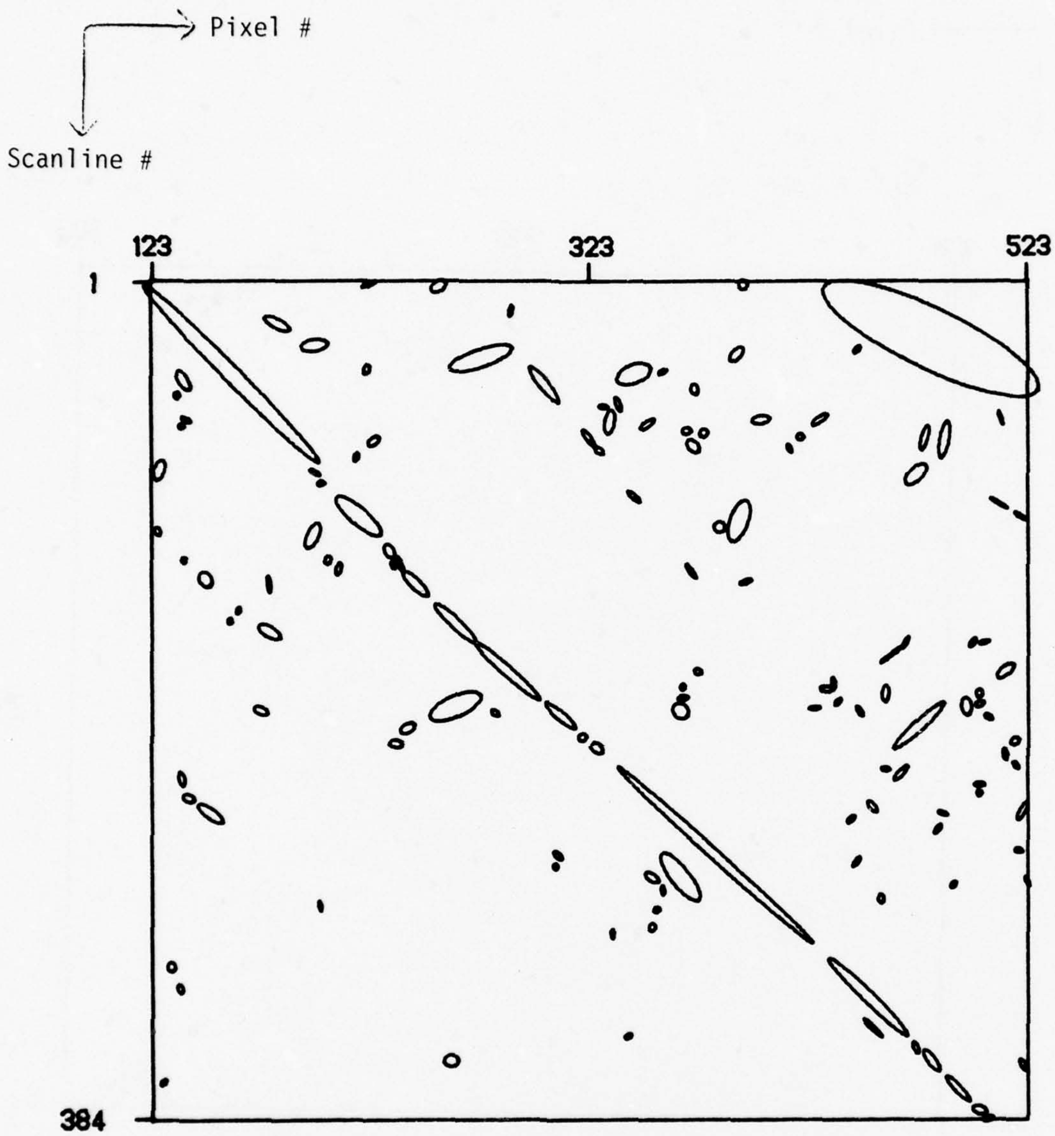
Area: CONIFERS

Temperature Threshold

= Ave. + 3.00 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 37d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - SUNSET



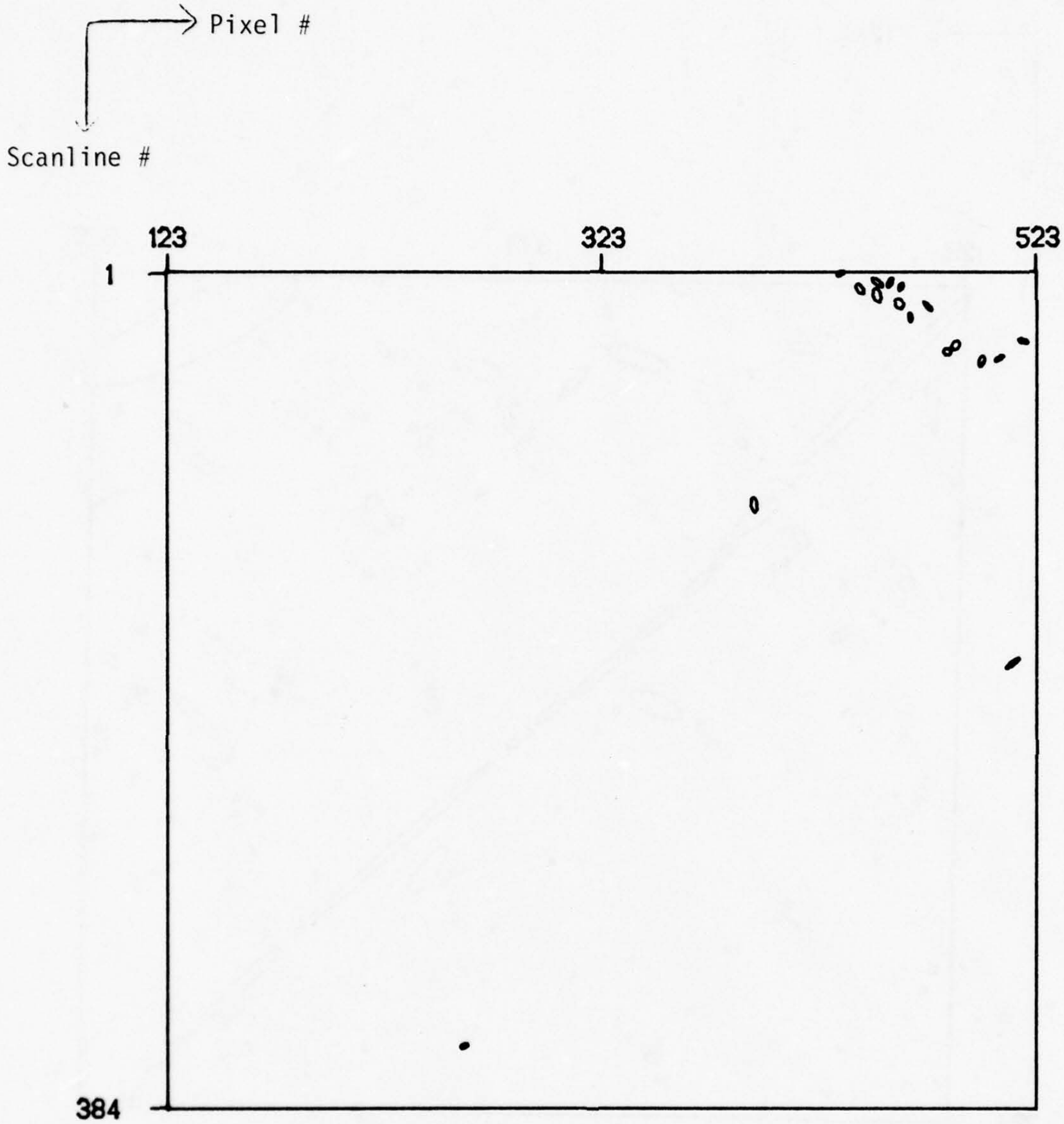
Area: CITY

Temperature Threshold

= Ave. + 1.50 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 38a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



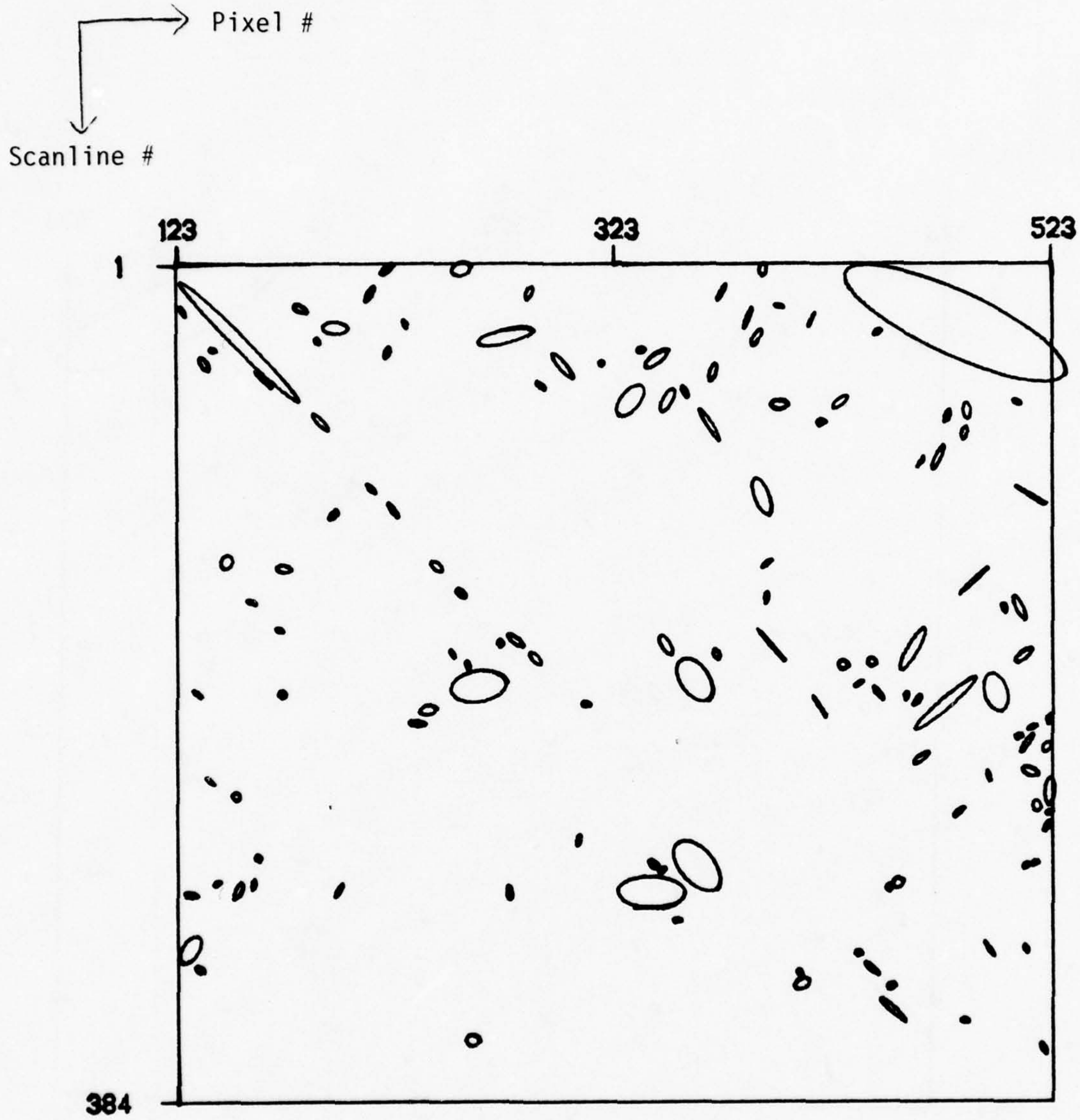
Area: CITY

Temperature Threshold

= Ave. + 3.63 σ

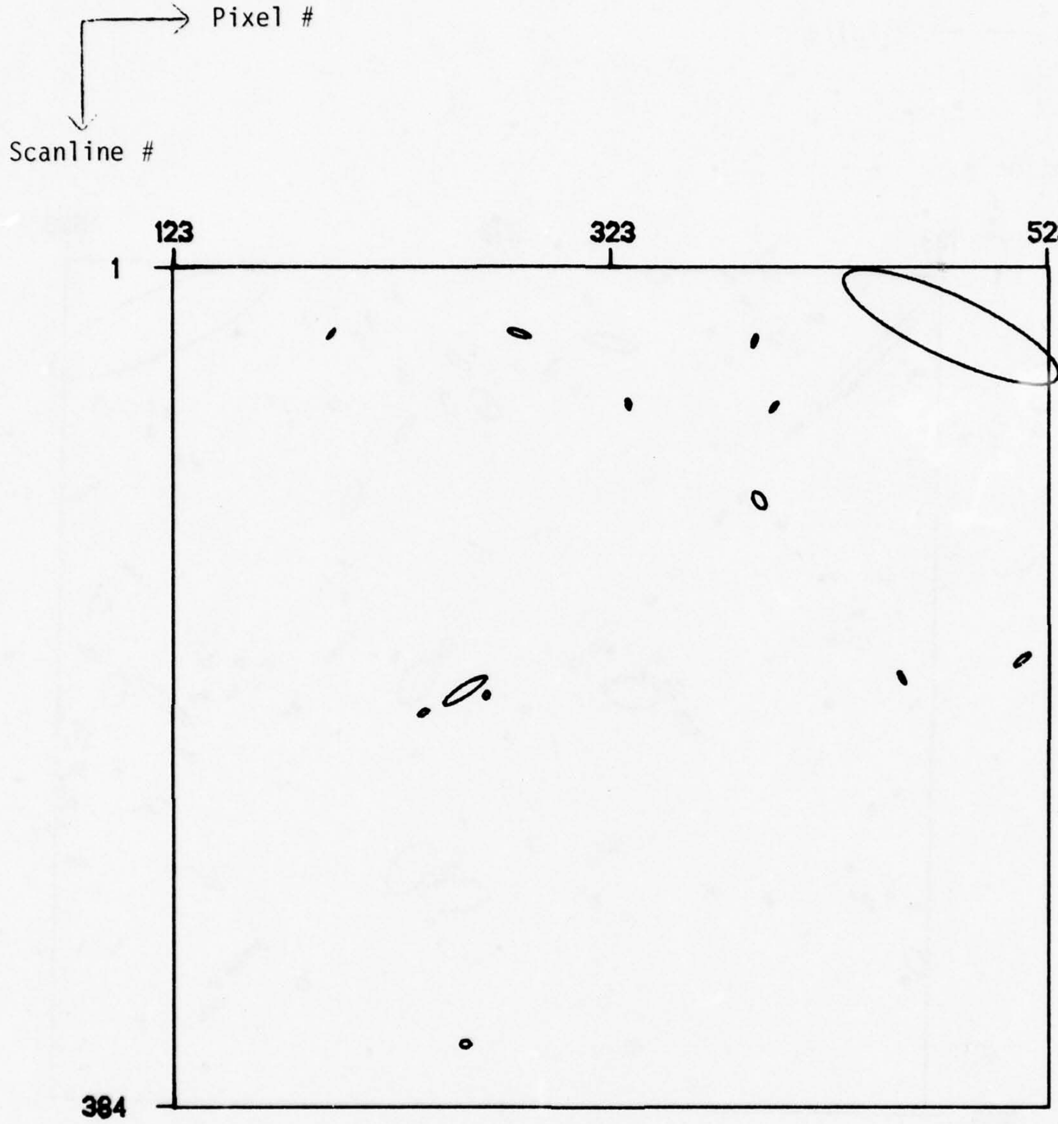
Wavelength = 4.5 - 5.5 μm

FIGURE 38b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



Area: CITY
Temperature Threshold
= Ave. + 1.50 σ
Wavelength = 9.0 - 11.4 μm

FIGURE 38c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



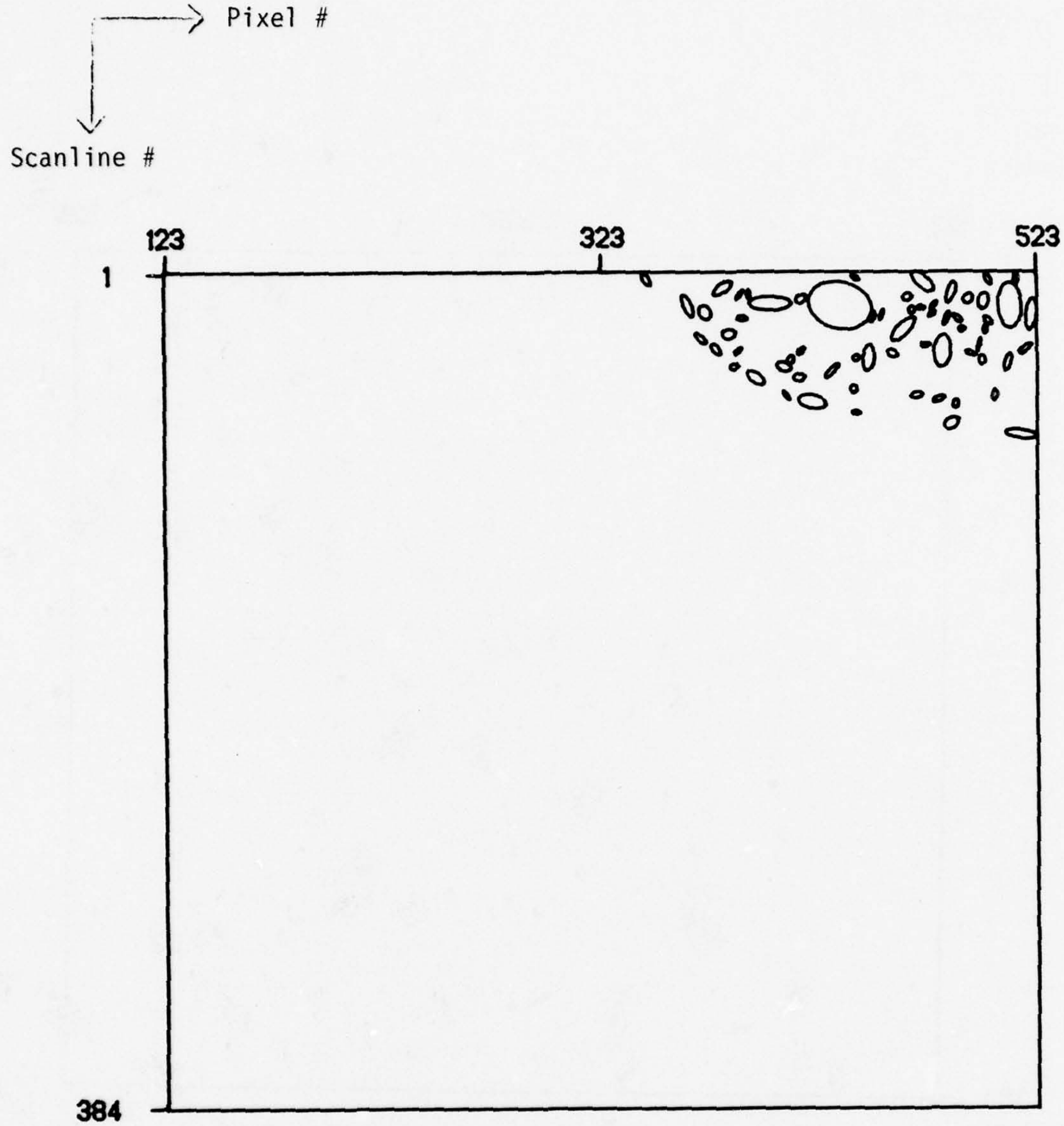
Area: CITY

Temperature Threshold

= Ave. + 2.50 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 38d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



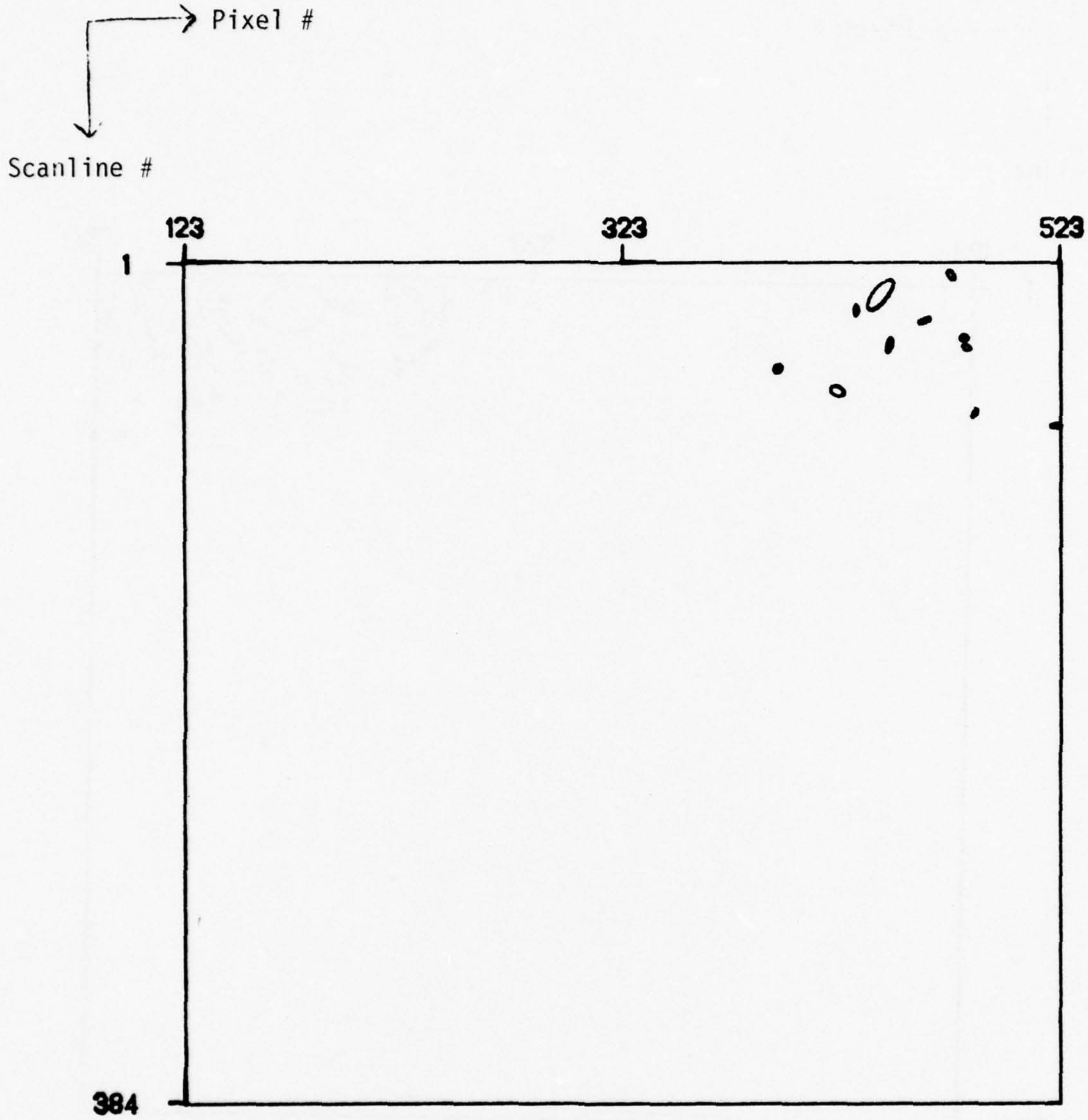
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.00 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 39a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



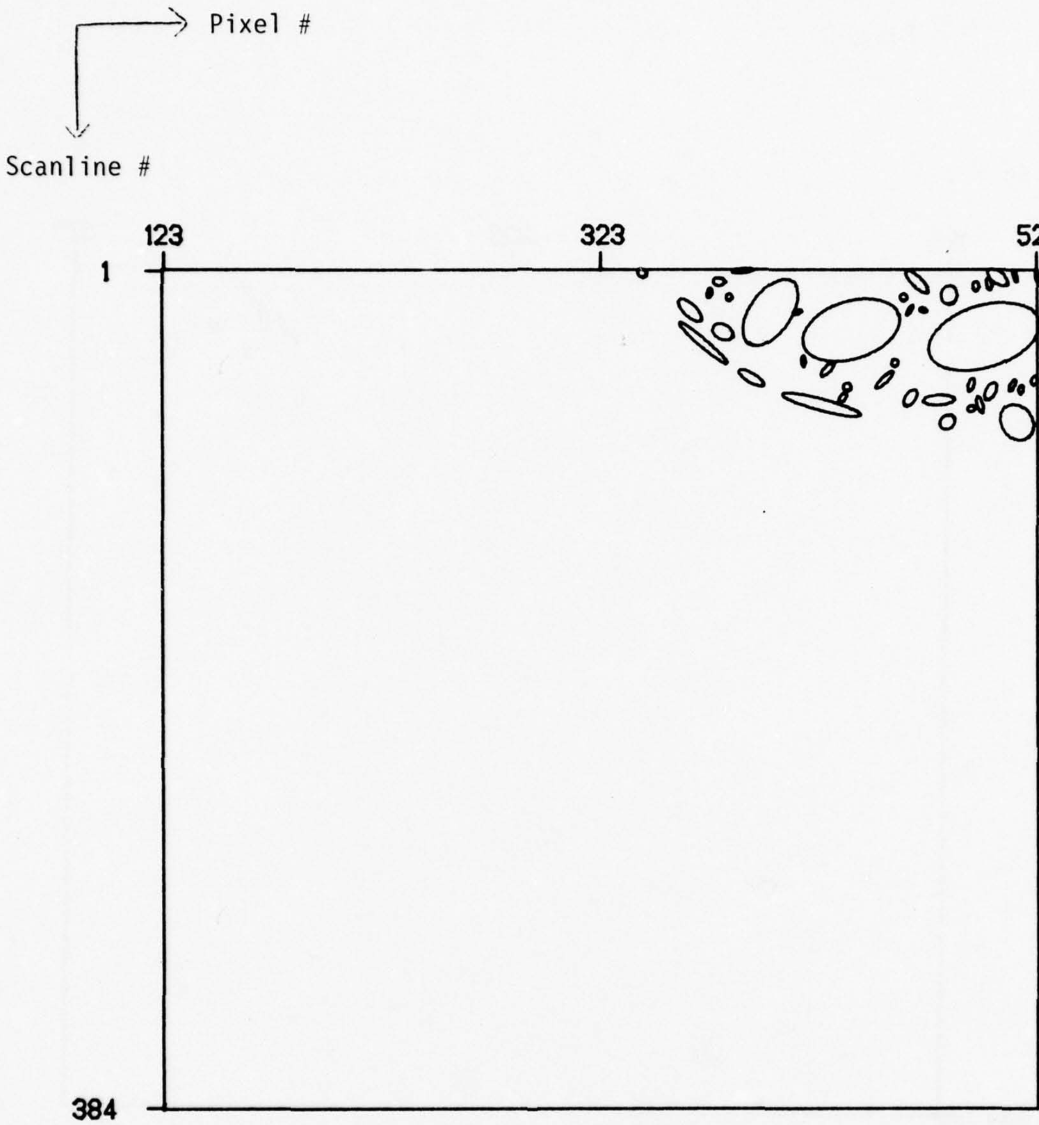
Area: LAND & WATER

Temperature Threshold

= Ave. + 4.87 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 39b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



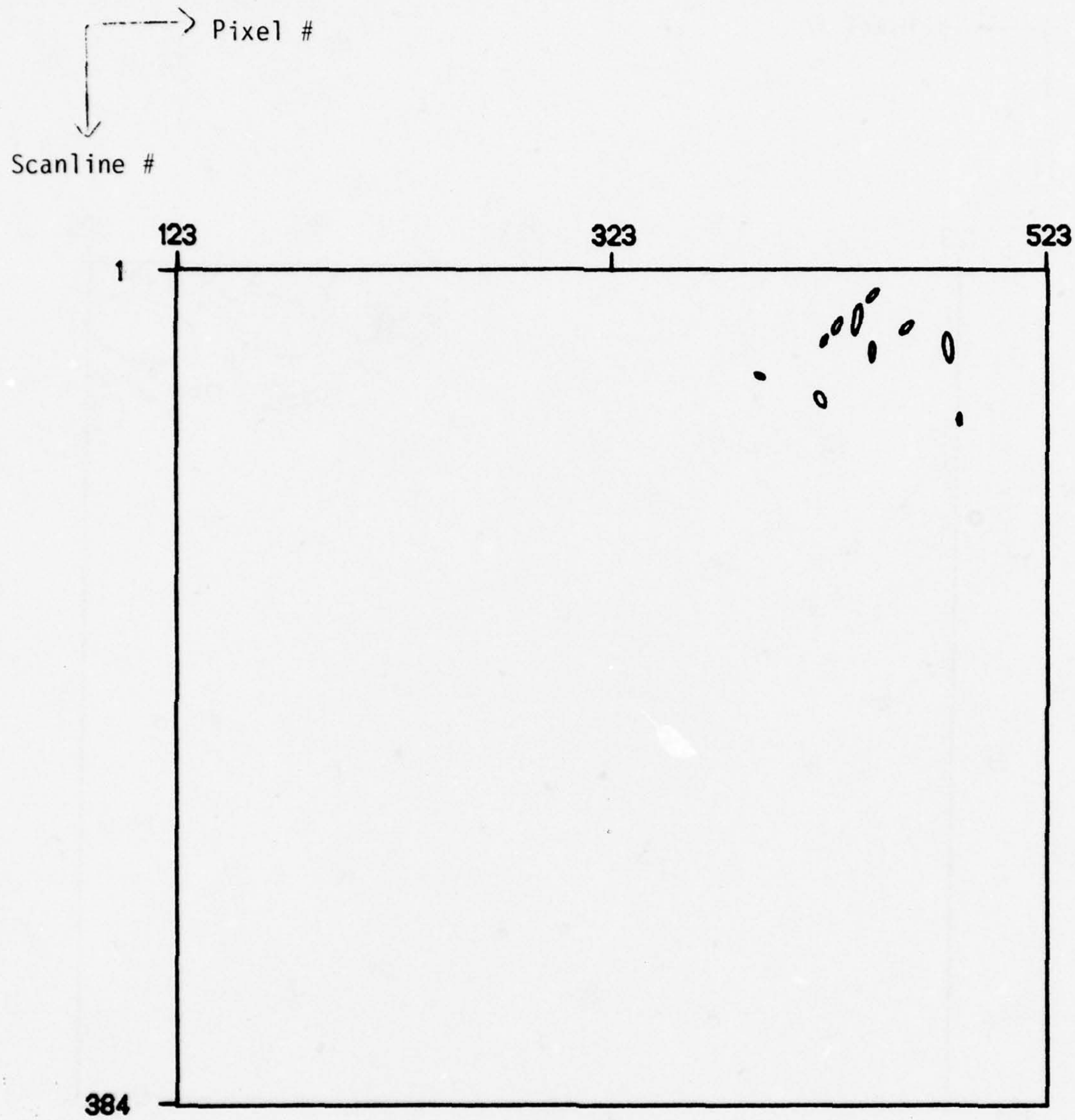
Area: LAND & WATER

Temperature Threshold

= Ave. + 3.00 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 39c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



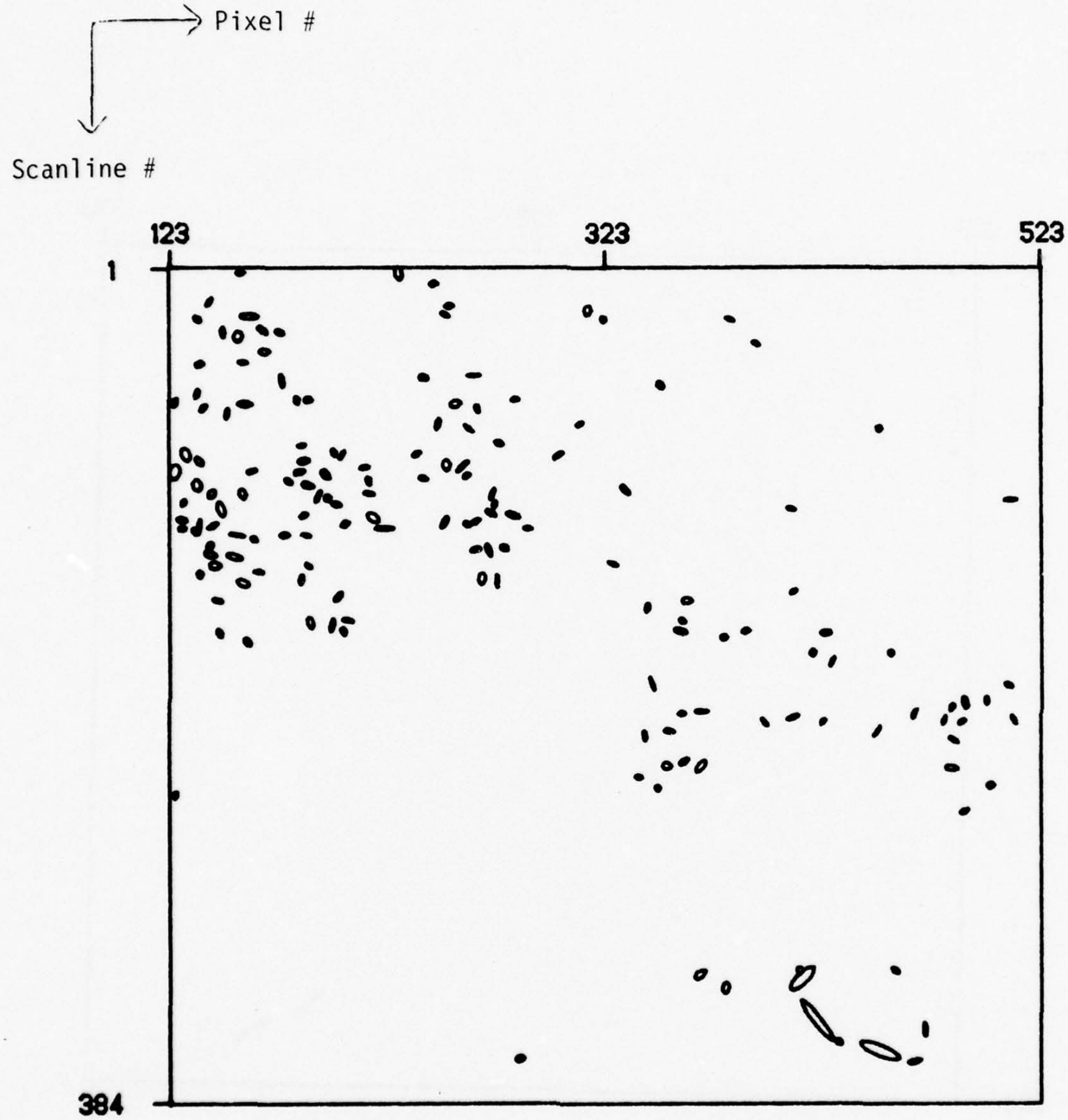
Area: LAND & WATER

Temperature Threshold

= Ave. + 5.15 σ

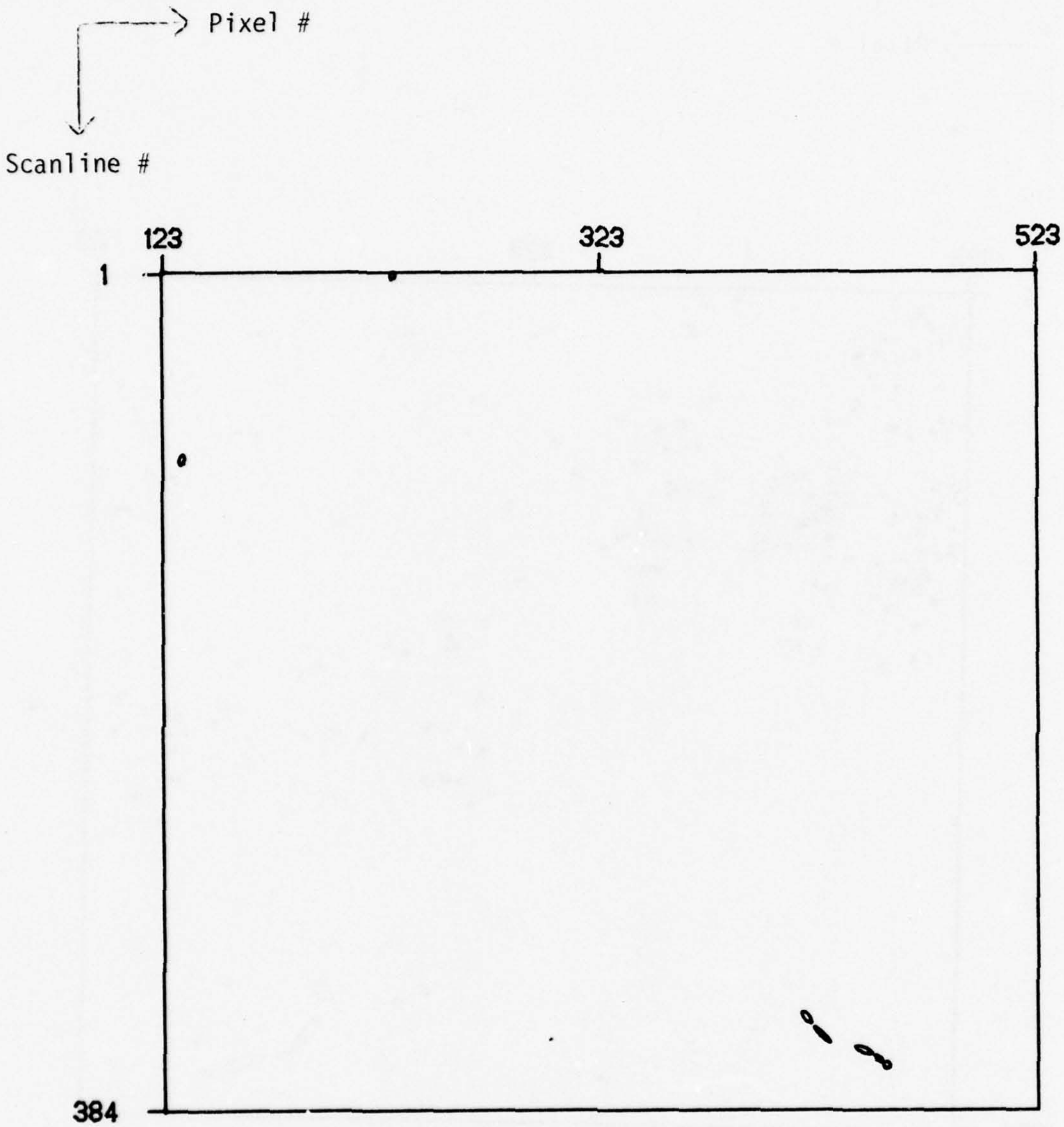
Wavelength = 9.0 - 11.4 μm

FIGURE 39d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



Area: CONIFERS
Temperature Threshold
= Ave. + 1.40 σ
Wavelength = 4.5 - 5.5 μm

FIGURE 40a. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



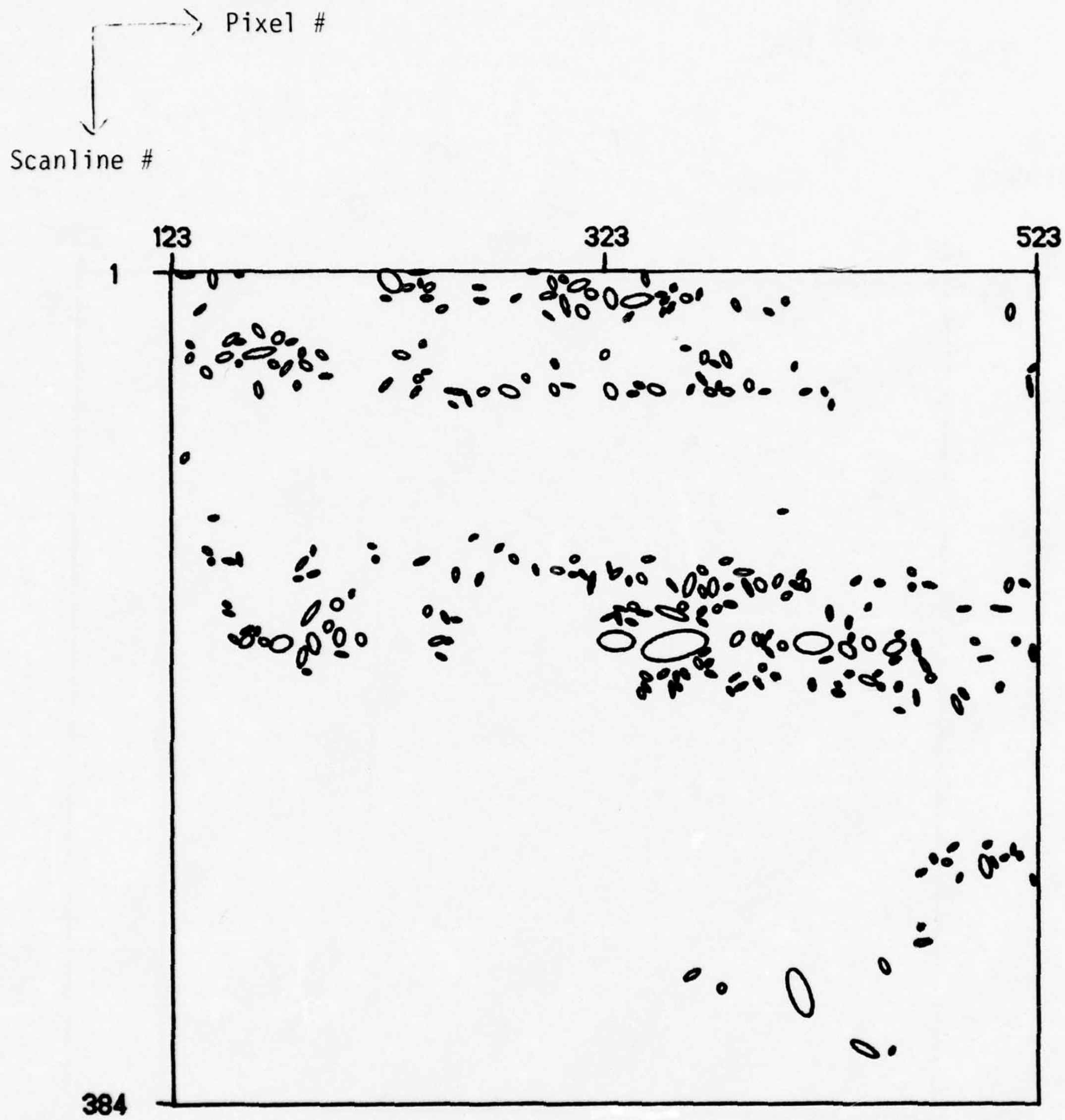
Area: CONIFERS

Temperature Threshold

= Ave. + 2.00 σ

Wavelength = 4.5 - 5.5 μm

FIGURE 40b. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



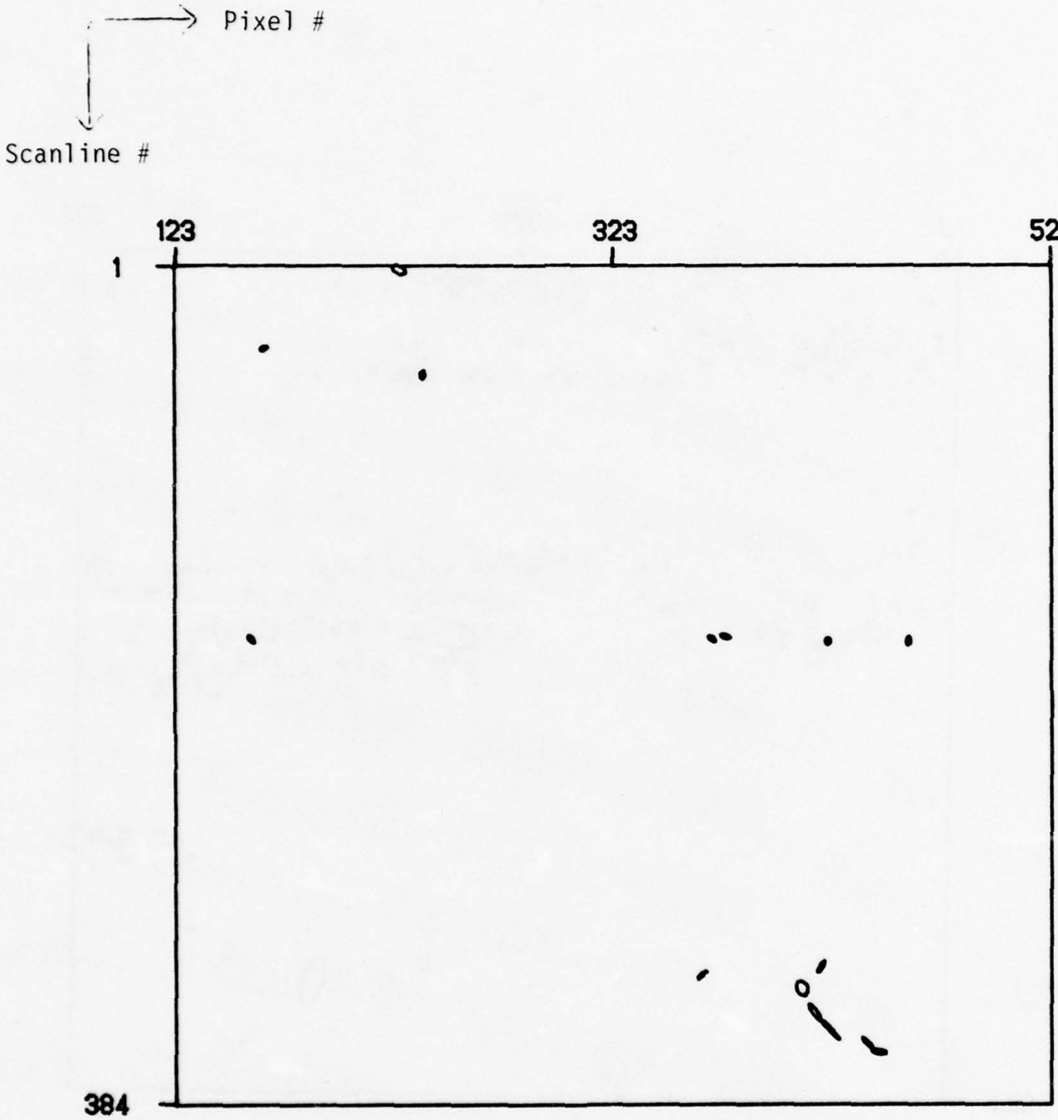
Area: CONIFERS

Temperature Threshold

= Ave. + 1.19 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 40c. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT



Area: CONIFERS

Temperature Threshold

= Ave. + 1.50 σ

Wavelength = 9.0 - 11.4 μm

FIGURE 40d. EQUIVALENT ELLIPTICAL AREAS FOR MICHIGAN WINTER SCENE - MIDNIGHT

TABLE 18a. PRE-DAWN - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 0.85 σ

4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	39
10.0 TO	15.0	64
15.0 TO	20.0	23
20.0 TO	25.0	18
25.0 TO	30.0	7
30.0 TO	35.0	10
35.0 TO	40.0	5
40.0 TO	45.0	6
45.0 TO	50.0	2
50.0 TO	75.0	4
75.0 TO	100.0	3
100.0 TO	150.0	4
150.0 TO	200.0	1
200.0 TO	250.0	1
250.0 TO	300.0	1
300.0 TO	400.0	1
400.0 TO	500.0	1
OVER	500.0	7

TOTAL NUMBER OF HOT SPOT = 197

1018 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	11
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	18
17 TO 20	55 TO 65	24
20 TO 22	65 TO 72	29
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	16
26 TO 28	85 TO 91	10
28 TO 30	91 TO 98	11
30 TO 32	98 TO 104	1
32 TO 39	104 TO 127	22
39 TO 45	127 TO 147	11
45 TO 55	147 TO 180	11
55 TO 71	180 TO 232	5
71 TO 100	232 TO 328	10
OVER 100	OVER 328	18

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	2
1.2 TO 1.3	12
1.3 TO 1.4	7
1.4 TO 1.5	9
1.5 TO 1.6	15
1.6 TO 1.7	8
1.7 TO 1.8	29
1.8 TO 1.9	14
1.9 TO 2.0	12
2.0 TO 2.4	44
2.4 TO 2.6	13
2.6 TO 2.8	4
2.8 TO 3.0	6
3.0 TO 3.5	9
3.5 TO 4.0	3
4.0 TO 4.5	2
OVER 4.5	8

TABLE 18b. PRE-DAWN - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.87 σ

4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	3
10.0 TO	15.0	5
15.0 TO	20.0	0
20.0 TO	25.0	0
25.0 TO	30.0	0
30.0 TO	35.0	0
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 8

360 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	0
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	0
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	0
17 TO	20	55 TO	65	2
20 TO	22	65 TO	72	3
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	1
26 TO	28	85 TO	91	1
28 TO	30	91 TO	98	1
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	0
39 TO	45	127 TO	147	0
45 TO	55	147 TO	180	0
55 TO	71	180 TO	232	0
71 TO	100	232 TO	328	0
OVER	100	OVER	328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	1
1.5 TO 1.6	0
1.6 TO 1.7	0
1.7 TO 1.8	1
1.8 TO 1.9	1
1.9 TO 2.0	0
2.0 TO 2.4	5
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 18c. PRE-DAWN - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 0.05 σ

9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	36
10.0 TO	15.0	56
15.0 TO	20.0	36
20.0 TO	25.0	40
25.0 TO	30.0	13
30.0 TO	35.0	19
35.0 TO	40.0	12
40.0 TO	45.0	8
45.0 TO	50.0	3
50.0 TO	75.0	17
75.0 TO	100.0	12
100.0 TO	150.0	12
150.0 TO	200.0	4
200.0 TO	250.0	5
250.0 TO	300.0	1
300.0 TO	400.0	2
400.0 TO	500.0	0
OVER	500.0	6

TOTAL NUMBER OF HOT SPOT = 282

602 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	1
10 TO 12	32 TO 39	1
12 TO 14	39 TO 45	16
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	27
17 TO 20	55 TO 65	27
20 TO 22	65 TO 72	13
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	15
26 TO 28	85 TO 91	17
28 TO 30	91 TO 98	21
30 TO 32	98 TO 104	2
32 TO 39	104 TO 127	42
39 TO 45	127 TO 147	15
45 TO 55	147 TO 180	24
55 TO 71	180 TO 232	12
71 TO 100	232 TO 328	21
OVER 100	OVER 328	28

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	2
1.0 TO 1.1	0
1.1 TO 1.2	2
1.2 TO 1.3	20
1.3 TO 1.4	18
1.4 TO 1.5	11
1.5 TO 1.6	21
1.6 TO 1.7	25
1.7 TO 1.8	28
1.8 TO 1.9	21
1.9 TO 2.0	18
2.0 TO 2.4	52
2.4 TO 2.6	16
2.6 TO 2.8	16
2.8 TO 3.0	3
3.0 TO 3.5	15
3.5 TO 4.0	5
4.0 TO 4.5	1
OVER 4.5	8

TABLE 18d. PRE-DAWN - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

Threshold = Ave. + 2.03 σ

BY AREA

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	0
10.0	TO	15.0	0
15.0	TO	20.0	1
20.0	TO	25.0	1
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	1
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	2

TOTAL NUMBER OF HOT SPOT = 5

15 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	0
17 TO 20	55 TO 65	0
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	0
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	3

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	1
1.5 TO 1.6	1
1.6 TO 1.7	0
1.7 TO 1.8	0
1.8 TO 1.9	0
1.9 TO 2.0	0
2.0 TO 2.4	1
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	1
3.5 TO 4.0	1
4.0 TO 4.5	0
OVER 4.5	0

TABLE 19a. PRE-DAWN - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 2.15 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	26
10.0	TO	15.0	40
15.0	TO	20.0	25
20.0	TO	25.0	13
25.0	TO	30.0	5
30.0	TO	35.0	6
35.0	TO	40.0	3
40.0	TO	45.0	1
45.0	TO	50.0	4
50.0	TO	75.0	14
75.0	TO	100.0	9
100.0	TO	150.0	7
150.0	TO	200.0	3
200.0	TO	250.0	0
250.0	TO	300.0	3
300.0	TO	400.0	3
400.0	TO	500.0	1
	OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 164

747 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	6
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	10
17	TO	20	55	TO	65	15
20	TO	22	65	TO	72	17
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	14
26	TO	28	85	TO	91	6
28	TO	30	91	TO	98	10
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	22
39	TO	45	127	TO	147	8
45	TO	55	147	TO	180	7
55	TO	71	180	TO	232	5
71	TO	100	232	TO	328	17
OVER		100	OVER		328	27

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	1
1.2	TO	1.3	7
1.3	TO	1.4	1
1.4	TO	1.5	6
1.5	TO	1.6	13
1.6	TO	1.7	8
1.7	TO	1.8	14
1.8	TO	1.9	8
1.9	TO	2.0	6
2.0	TO	2.4	34
2.4	TO	2.6	18
2.6	TO	2.8	7
2.8	TO	3.0	9
3.0	TO	3.5	11
3.5	TO	4.0	8
4.0	TO	4.5	3
OVER		4.5	10

TABLE 19b. PRE-DAWN - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.71 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	1
10.0	TO	15.0	1
15.0	TO	20.0	1
20.0	TO	25.0	1
25.0	TO	30.0	1
30.0	TO	35.0	1
35.0	TO	40.0	1
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 7

34 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	1
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	0
17 TO 20	55 TO 65	0
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	1
1.3 TO 1.4	0
1.4 TO 1.5	0
1.5 TO 1.6	2
1.6 TO 1.7	1
1.7 TO 1.8	1
1.8 TO 1.9	2
1.9 TO 2.0	0
2.0 TO 2.4	0
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

ERIM

TABLE 19c. PRE-DAWN - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 2.09 σ

9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	25
10.0 TO	15.0	37
15.0 TO	20.0	20
20.0 TO	25.0	13
25.0 TO	30.0	6
30.0 TO	35.0	8
35.0 TO	40.0	7
40.0 TO	45.0	3
45.0 TO	50.0	2
50.0 TO	75.0	9
75.0 TO	100.0	4
100.0 TO	150.0	2
150.0 TO	200.0	3
200.0 TO	250.0	1
250.0 TO	300.0	1
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	3

TOTAL NUMBER OF HOT SPOT = 144

346 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	8
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	13
17 TO 20	55 TO 65	21
20 TO 22	65 TO 72	15
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	8
26 TO 28	85 TO 91	9
28 TO 30	91 TO 98	8
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	16
39 TO 45	127 TO 147	14
45 TO 55	147 TO 180	7
55 TO 71	180 TO 232	5
71 TO 100	232 TO 328	10
OVER 100	OVER 328	10

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	2
1.2 TO 1.3	10
1.3 TO 1.4	6
1.4 TO 1.5	6
1.5 TO 1.6	14
1.6 TO 1.7	12
1.7 TO 1.8	19
1.8 TO 1.9	10
1.9 TO 2.0	6
2.0 TO 2.4	32
2.4 TO 2.6	7
2.6 TO 2.8	8
2.8 TO 3.0	2
3.0 TO 3.5	5
3.5 TO 4.0	1
4.0 TO 4.5	1
OVER 4.5	3

TABLE 19d. PRE-DAWN - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

Threshold = Ave. + 3.66 σ

9.0 - 11.4 μm

BY AREA

SQUARE METERS		FREQUENCY
8.0 TO	10.0	1
10.0 TO	15.0	0
15.0 TO	20.0	1
20.0 TO	25.0	2
25.0 TO	30.0	2
30.0 TO	35.0	1
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 7

18 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	0
20 TO 22	65 TO 72	0
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	2
28 TO 30	91 TO 98	1
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	3
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	1
1.5 TO 1.6	1
1.6 TO 1.7	0
1.7 TO 1.8	2
1.8 TO 1.9	2
1.9 TO 2.0	1
2.0 TO 2.4	0
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 20a. PRE-DAWN - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 1.71 σ

4.5 - 5.5 μm

SQUARE METERS	FREQUENCY
8.0 TO 10.0	34
10.0 TO 15.0	45
15.0 TO 20.0	21
20.0 TO 25.0	13
25.0 TO 30.0	5
30.0 TO 35.0	2
35.0 TO 40.0	4
40.0 TO 45.0	0
45.0 TO 50.0	4
50.0 TO 75.0	2
75.0 TO 100.0	1
100.0 TO 150.0	2
150.0 TO 200.0	0
200.0 TO 250.0	1
250.0 TO 300.0	0
300.0 TO 400.0	0
400.0 TO 500.0	1
OVER 500.0	1

TOTAL NUMBER OF HOT SPOT = 136

2043 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	9
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	18
17 TO 20	55 TO 65	14
20 TO 22	65 TO 72	17
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	15
26 TO 28	85 TO 91	13
28 TO 30	91 TO 98	7
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	18
39 TO 45	127 TO 147	10
45 TO 55	147 TO 180	4
55 TO 71	180 TO 232	4
71 TO 100	232 TO 328	1
OVER 100	OVER 328	6

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	3
1.2 TO 1.3	9
1.3 TO 1.4	5
1.4 TO 1.5	5
1.5 TO 1.6	14
1.6 TO 1.7	11
1.7 TO 1.8	11
1.8 TO 1.9	9
1.9 TO 2.0	10
2.0 TO 2.4	35
2.4 TO 2.6	11
2.6 TO 2.8	4
2.8 TO 3.0	2
3.0 TO 3.5	2
3.5 TO 4.0	2
4.0 TO 4.5	2
OVER 4.5	1

TABLE 20b. PRE-DAWN - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.25 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	3
10.0	TO	15.0	7
15.0	TO	20.0	3
20.0	TO	25.0	0
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	2
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 15

51 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	2
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	0
17	TO	20	55	TO	65	3
20	TO	22	65	TO	72	3
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	2
26	TO	28	85	TO	91	0
28	TO	30	91	TO	98	2
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	1
39	TO	45	127	TO	147	0
45	TO	55	147	TO	180	0
55	TO	71	180	TO	232	1
71	TO	100	232	TO	328	1
OVER		100	OVER		328	0

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	2
1.3	TO	1.4	0
1.4	TO	1.5	2
1.5	TO	1.6	2
1.6	TO	1.7	0
1.7	TO	1.8	2
1.8	TO	1.9	1
1.9	TO	2.0	1
2.0	TO	2.4	2
2.4	TO	2.6	1
2.6	TO	2.8	2
2.8	TO	3.0	0
3.0	TO	3.5	0
3.5	TO	4.0	0
4.0	TO	4.5	0
	OVER	4.5	0

TABLE 20c. PRE-DAWN - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.56 σ

9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	33
10.0 TO	15.0	48
15.0 TO	20.0	24
20.0 TO	25.0	12
25.0 TO	30.0	4
30.0 TO	35.0	6
35.0 TO	40.0	4
40.0 TO	45.0	4
45.0 TO	50.0	0
50.0 TO	75.0	5
75.0 TO	100.0	1
100.0 TO	150.0	4
150.0 TO	200.0	2
200.0 TO	250.0	1
250.0 TO	300.0	0
300.0 TO	400.0	1
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 149

902 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	13
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	25
17 TO 20	55 TO 65	26
20 TO 22	65 TO 72	16
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	13
26 TO 28	85 TO 91	8
28 TO 30	91 TO 98	2
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	16
39 TO 45	127 TO 147	7
45 TO 55	147 TO 180	7
55 TO 71	180 TO 232	4
71 TO 100	232 TO 328	3
OVER 100	OVER 328	9

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	3
1.2 TO 1.3	17
1.3 TO 1.4	12
1.4 TO 1.5	6
1.5 TO 1.6	17
1.6 TO 1.7	18
1.7 TO 1.8	19
1.8 TO 1.9	9
1.9 TO 2.0	5
2.0 TO 2.4	22
2.4 TO 2.6	7
2.6 TO 2.8	2
2.8 TO 3.0	2
3.0 TO 3.5	5
3.5 TO 4.0	3
4.0 TO 4.5	2
OVER 4.5	0

TABLE 20d. PRE-DAWN - CONIFER AREA DISTRIBUTIONS

Threshold = Ave. + 3.12 σ

9.0 - 11.4 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS			FREQUENCY
8.0	TO	10.0	3
10.0	TO	15.0	1
15.0	TO	20.0	0
20.0	TO	25.0	0
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 4

25 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	2
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	0
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	0
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	2
1.3 TO 1.4	0
1.4 TO 1.5	0
1.5 TO 1.6	1
1.6 TO 1.7	0
1.7 TO 1.8	1
1.8 TO 1.9	0
1.9 TO 2.0	0
2.0 TO 2.4	0
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 21a. NOON - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 2.00 σ
3.5 - 3.9 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	21
10.0	TO	15.0	26
15.0	TO	20.0	13
20.0	TO	25.0	8
25.0	TO	30.0	2
30.0	TO	35.0	6
35.0	TO	40.0	6
40.0	TO	45.0	5
45.0	TO	50.0	5
50.0	TO	75.0	11
75.0	TO	100.0	7
100.0	TO	150.0	5
150.0	TO	200.0	4
200.0	TO	250.0	1
250.0	TO	300.0	2
300.0	TO	400.0	2
400.0	TO	500.0	0
	OVER	500.0	3

TOTAL NUMBER OF HOT SPOT = 127

259 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	5
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	10
17 TO 20	55 TO 65	19
20 TO 22	65 TO 72	9
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	7
26 TO 28	85 TO 91	6
28 TO 30	91 TO 98	5
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	13
39 TO 45	127 TO 147	9
45 TO 55	147 TO 180	13
55 TO 71	180 TO 232	9
71 TO 100	232 TO 328	9
OVER 100	OVER 328	13

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	2
1.2 TO 1.3	7
1.3 TO 1.4	4
1.4 TO 1.5	7
1.5 TO 1.6	14
1.6 TO 1.7	12
1.7 TO 1.8	20
1.8 TO 1.9	9
1.9 TO 2.0	8
2.0 TO 2.4	20
2.4 TO 2.6	5
2.6 TO 2.8	2
2.8 TO 3.0	2
3.0 TO 3.5	7
3.5 TO 4.0	4
4.0 TO 4.5	2
OVER 4.5	2

TABLE 21b. NOON - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.50 σ

3.5 - 3.9 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	2
10.0 TO	15.0	7
15.0 TO	20.0	1
20.0 TO	25.0	1
25.0 TO	30.0	1
30.0 TO	35.0	2
35.0 TO	40.0	1
40.0 TO	45.0	1
45.0 TO	50.0	1
50.0 TO	75.0	3
75.0 TO	100.0	3
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	1
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 24

35 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	5
17 TO 20	55 TO 65	3
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	1
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	0
39 TO 45	127 TO 147	4
45 TO 55	147 TO 180	4
55 TO 71	180 TO 232	1
71 TO 100	232 TO 328	3
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	0
1.3 TO 1.4	5
1.4 TO 1.5	3
1.5 TO 1.6	2
1.6 TO 1.7	2
1.7 TO 1.8	3
1.8 TO 1.9	2
1.9 TO 2.0	1
2.0 TO 2.4	3
2.4 TO 2.6	0
2.6 TO 2.8	1
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	1
4.0 TO 4.5	0
OVER 4.5	0

TABLE 21c. NOON - CITY AREA DISTRIBUTIONS

Threshold = Ave. + 2.53 σ

4.5 - 5.5 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS		FREQUENCY
8.0 TO	10.0	17
10.0 TO	15.0	31
15.0 TO	20.0	19
20.0 TO	25.0	17
25.0 TO	30.0	6
30.0 TO	35.0	9
35.0 TO	40.0	4
40.0 TO	45.0	7
45.0 TO	50.0	4
50.0 TO	75.0	12
75.0 TO	100.0	7
100.0 TO	150.0	4
150.0 TO	200.0	3
200.0 TO	250.0	3
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	5

TOTAL NUMBER OF HOT SPOT = 148

230 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	1
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	12
17 TO 20	55 TO 65	11
20 TO 22	65 TO 72	19
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	13
26 TO 28	85 TO 91	5
28 TO 30	91 TO 98	11
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	16
39 TO 45	127 TO 147	13
45 TO 55	147 TO 180	16
55 TO 71	180 TO 232	11
71 TO 100	232 TO 328	10
OVER 100	OVER 328	10

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	2
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	5
1.3 TO 1.4	4
1.4 TO 1.5	7
1.5 TO 1.6	32
1.6 TO 1.7	7
1.7 TO 1.8	17
1.8 TO 1.9	8
1.9 TO 2.0	5
2.0 TO 2.4	30
2.4 TO 2.6	7
2.6 TO 2.8	5
2.8 TO 3.0	7
3.0 TO 3.5	4
3.5 TO 4.0	3
4.0 TO 4.5	1
OVER 4.5	4

AD-A077 554 ENVIRONMENTAL RESEARCH INST OF MICHIGAN ANN ARBOR IN--ETC F/G 17/5
STATISTICAL ANALYSIS OF TERRAIN AND WATER (ICE) BACKGROUNDS IN --ETC(U)
OCT 79 A J LAROCCA N60530-79-R-0036
UNCLASSIFIED ERIM-139900-2-F NL

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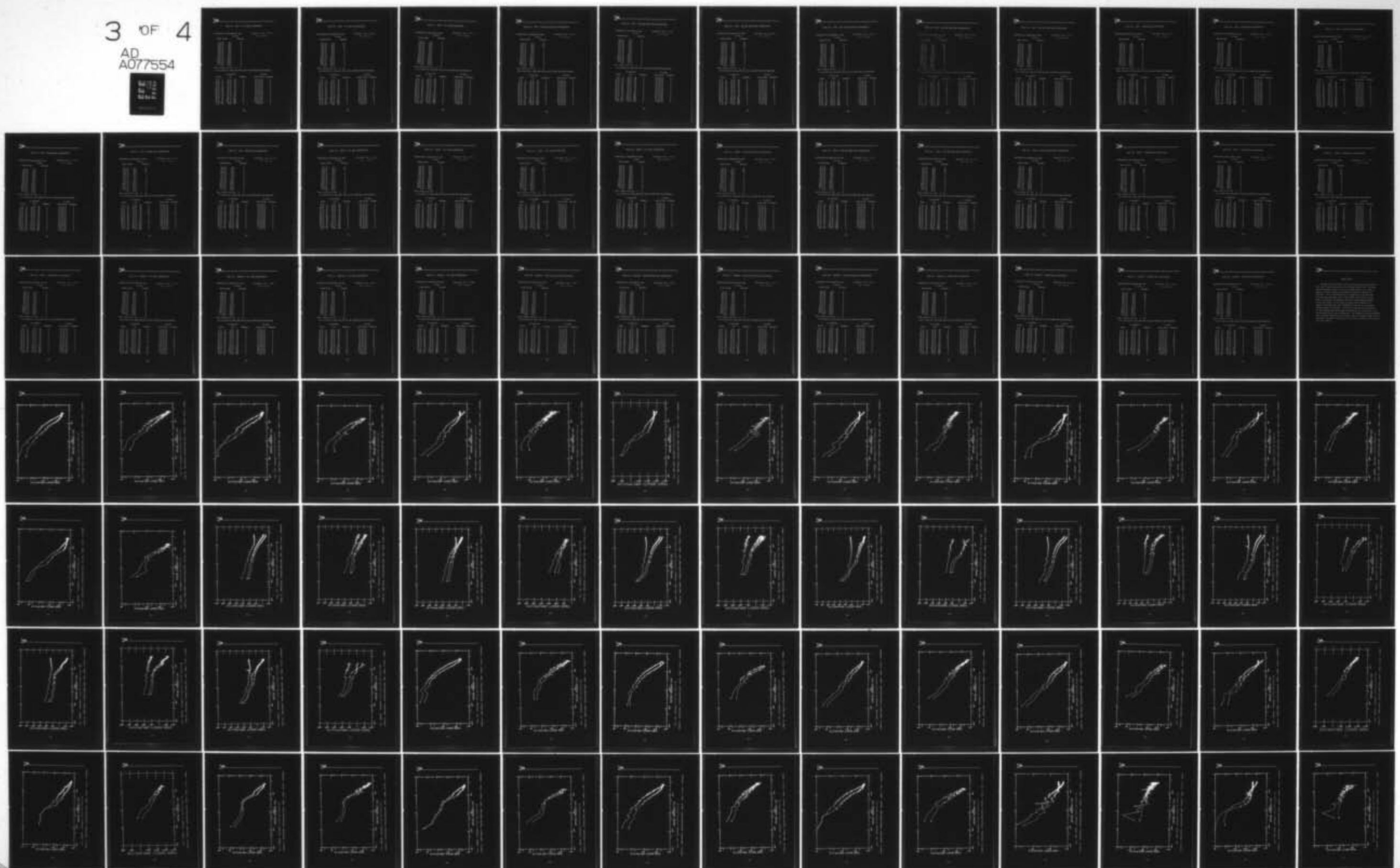


TABLE 21d. NOON - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.29 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	5
10.0	TO	15.0	5
15.0	TO	20.0	8
20.0	TO	25.0	2
25.0	TO	30.0	2
30.0	TO	35.0	2
35.0	TO	40.0	3
40.0	TO	45.0	2
45.0	TO	50.0	2
50.0	TO	75.0	1
75.0	TO	100.0	1
100.0	TO	150.0	1
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 34

109 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	3
14	TO	16	45	TO	52	1
16	TO	17	52	TO	55	5
17	TO	20	55	TO	65	3
20	TO	22	65	TO	72	1
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	3
26	TO	28	85	TO	91	2
28	TO	30	91	TO	98	5
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	4
39	TO	45	127	TO	147	3
45	TO	55	147	TO	180	2
55	TO	71	180	TO	232	2
71	TO	100	232	TO	328	0
OVER		100	OVER		328	0

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	2
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	2
1.3	TO	1.4	5
1.4	TO	1.5	5
1.5	TO	1.6	8
1.6	TO	1.7	2
1.7	TO	1.8	1
1.8	TO	1.9	2
1.9	TO	2.0	4
2.0	TO	2.4	3
2.4	TO	2.6	0
2.6	TO	2.8	0
2.8	TO	3.0	0
3.0	TO	3.5	0
3.5	TO	4.0	0
4.0	TO	4.5	0
OVER		4.5	0

TABLE 21e. NOON - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.82 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	17
10.0	TO	15.0	34
15.0	TO	20.0	19
20.0	TO	25.0	13
25.0	TO	30.0	4
30.0	TO	35.0	6
35.0	TO	40.0	3
40.0	TO	45.0	4
45.0	TO	50.0	3
50.0	TO	75.0	7
75.0	TO	100.0	2
100.0	TO	150.0	3
150.0	TO	200.0	1
200.0	TO	250.0	1
250.0	TO	300.0	0
300.0	TO	400.0	1
400.0	TO	500.0	0
	OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 119

207 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	3
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	7
17 TO 20	55 TO 65	18
20 TO 22	65 TO 72	7
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	16
26 TO 28	85 TO 91	8
28 TO 30	91 TO 98	6
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	14
39 TO 45	127 TO 147	5
45 TO 55	147 TO 180	17
55 TO 71	180 TO 232	8
71 TO 100	232 TO 328	4
OVER 100	OVER 328	6

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	3
1.3 TO 1.4	9
1.4 TO 1.5	5
1.5 TO 1.6	13
1.6 TO 1.7	10
1.7 TO 1.8	16
1.8 TO 1.9	4
1.9 TO 2.0	7
2.0 TO 2.4	24
2.4 TO 2.6	5
2.6 TO 2.8	11
2.8 TO 3.0	3
3.0 TO 3.5	5
3.5 TO 4.0	2
4.0 TO 4.5	1
OVER 4.5	1

ΣERIM

TABLE 21f. NOON - CITY AREA DISTRIBUTIONS

Threshold = Ave. + 3.57 σ

9.0 - 11.4 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS			FREQUENCY
8.0	TO	10.0	5
10.0	TO	15.0	6
15.0	TO	20.0	2
20.0	TO	25.0	5
25.0	TO	30.0	1
30.0	TO	35.0	3
35.0	TO	40.0	1
40.0	TO	45.0	0
45.0	TO	50.0	1
50.0	TO	75.0	1
75.0	TO	100.0	2
100.0	TO	150.0	2
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 29

210 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	0
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	2
17	TO	20	55	TO	65	4
20	TO	22	65	TO	72	2
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	1
26	TO	28	85	TO	91	1
28	TO	30	91	TO	98	4
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	7
39	TO	45	127	TO	147	2
45	TO	55	147	TO	180	2
55	TO	71	180	TO	232	2
71	TO	100	232	TO	328	2
OVER		100	OVER		328	0

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	0
1.3	TO	1.4	1
1.4	TO	1.5	0
1.5	TO	1.6	5
1.6	TO	1.7	4
1.7	TO	1.8	3
1.8	TO	1.9	4
1.9	TO	2.0	2
2.0	TO	2.4	7
2.4	TO	2.6	2
2.6	TO	2.8	0
2.8	TO	3.0	0
3.0	TO	3.5	1
3.5	TO	4.0	0
4.0	TO	4.5	0
	OVER	4.5	0

TABLE 22a. NOON - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.83 σ

3.5 - 3.9 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	22
10.0 TO	15.0	29
15.0 TO	20.0	20
20.0 TO	25.0	8
25.0 TO	30.0	1
30.0 TO	35.0	1
35.0 TO	40.0	4
40.0 TO	45.0	4
45.0 TO	50.0	3
50.0 TO	75.0	2
75.0 TO	100.0	1
100.0 TO	150.0	3
150.0 TO	200.0	1
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 99

1890 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	4
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	10
17 TO 20	55 TO 65	7
20 TO 22	65 TO 72	10
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	13
26 TO 28	85 TO 91	11
28 TO 30	91 TO 98	7
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	15
39 TO 45	127 TO 147	4
45 TO 55	147 TO 180	5
55 TO 71	180 TO 232	6
71 TO 100	232 TO 328	5
OVER 100	OVER 328	2

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	4
1.3 TO 1.4	6
1.4 TO 1.5	2
1.5 TO 1.6	7
1.6 TO 1.7	3
1.7 TO 1.8	12
1.8 TO 1.9	7
1.9 TO 2.0	5
2.0 TO 2.4	36
2.4 TO 2.6	5
2.6 TO 2.8	4
2.8 TO 3.0	1
3.0 TO 3.5	4
3.5 TO 4.0	1
4.0 TO 4.5	1
OVER 4.5	0

TABLE 22b. NOON - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.00 σ

3.5 - 3.9 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	0
10.0 TO	15.0	3
15.0 TO	20.0	2
20.0 TO	25.0	1
25.0 TO	30.0	1
30.0 TO	35.0	0
35.0 TO	40.0	1
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	4
75.0 TO	100.0	1
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 13

60 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	1
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	0
17 TO 20	55 TO 65	3
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	2
55 TO 71	180 TO 232	3
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	0
1.3 TO 1.4	3
1.4 TO 1.5	0
1.5 TO 1.6	3
1.6 TO 1.7	2
1.7 TO 1.8	1
1.8 TO 1.9	0
1.9 TO 2.0	0
2.0 TO 2.4	2
2.4 TO 2.6	1
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 22c. NOON - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 2.50 σ
4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	16
10.0 TO	15.0	34
15.0 TO	20.0	24
20.0 TO	25.0	17
25.0 TO	30.0	8
30.0 TO	35.0	3
35.0 TO	40.0	7
40.0 TO	45.0	1
45.0 TO	50.0	5
50.0 TO	75.0	11
75.0 TO	100.0	4
100.0 TO	150.0	4
150.0 TO	200.0	1
200.0 TO	250.0	1
250.0 TO	300.0	0
300.0 TO	400.0	1
400.0 TO	500.0	0
OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 138

190 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	0
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	12
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	18
17 TO	20	55 TO	65	16
20 TO	22	65 TO	72	12
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	14
26 TO	28	85 TO	91	8
28 TO	30	91 TO	98	8
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	17
39 TO	45	127 TO	147	7
45 TO	55	147 TO	180	7
55 TO	71	180 TO	232	7
71 TO	100	232 TO	328	5
OVER	100	OVER	328	7

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	6
1.2 TO 1.3	12
1.3 TO 1.4	20
1.4 TO 1.5	13
1.5 TO 1.6	21
1.6 TO 1.7	8
1.7 TO 1.8	13
1.8 TO 1.9	9
1.9 TO 2.0	5
2.0 TO 2.4	17
2.4 TO 2.6	4
2.6 TO 2.8	2
2.8 TO 3.0	2
3.0 TO 3.5	3
3.5 TO 4.0	2
4.0 TO 4.5	0
OVER 4.5	1

TABLE 22d. NOON - LAND AND WATER AREA DISTRIBUTIONS

Threshold = Ave. + 4.15 σ

4.5 - 5.5 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS		FREQUENCY
8.0 TO	10.0	4
10.0 TO	15.0	10
15.0 TO	20.0	1
20.0 TO	25.0	3
25.0 TO	30.0	3
30.0 TO	35.0	3
35.0 TO	40.0	2
40.0 TO	45.0	0
45.0 TO	50.0	1
50.0 TO	75.0	2
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 29

58 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	0
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	0
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	5
17 TO	20	55 TO	65	4
20 TO	22	65 TO	72	4
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	2
26 TO	28	85 TO	91	4
28 TO	30	91 TO	98	2
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	2
39 TO	45	127 TO	147	0
45 TO	55	147 TO	180	3
55 TO	71	180 TO	232	2
71 TO	100	232 TO	328	1
OVER	100	OVER	328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	2
1.3 TO 1.4	4
1.4 TO 1.5	3
1.5 TO 1.6	5
1.6 TO 1.7	1
1.7 TO 1.8	6
1.8 TO 1.9	0
1.9 TO 2.0	1
2.0 TO 2.4	3
2.4 TO 2.6	0
2.6 TO 2.8	2
2.8 TO 3.0	1
3.0 TO 3.5	0
3.5 TO 4.0	1
4.0 TO 4.5	0
OVER 4.5	0

TABLE 22e. NOON - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

Threshold = Ave. + 2.35 σ

9.0 - 11.4 μm

BY AREA

SQUARE METERS		FREQUENCY
8.0 TO	10.0	21
10.0 TO	15.0	53
15.0 TO	20.0	27
20.0 TO	25.0	10
25.0 TO	30.0	8
30.0 TO	35.0	10
35.0 TO	40.0	5
40.0 TO	45.0	2
45.0 TO	50.0	3
50.0 TO	75.0	15
75.0 TO	100.0	6
100.0 TO	150.0	4
150.0 TO	200.0	2
200.0 TO	250.0	0
250.0 TO	300.0	1
300.0 TO	400.0	1
400.0 TO	500.0	0
OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 169

275 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	0
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	5
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	25
17 TO	20	55 TO	65	27
20 TO	22	65 TO	72	18
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	19
26 TO	28	85 TO	91	8
28 TO	30	91 TO	98	8
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	14
39 TO	45	127 TO	147	6
45 TO	55	147 TO	180	11
55 TO	71	180 TO	232	14
71 TO	100	232 TO	328	7
OVER	100	OVER	328	7

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	12
1.3 TO 1.4	19
1.4 TO 1.5	18
1.5 TO 1.6	27
1.6 TO 1.7	10
1.7 TO 1.8	18
1.8 TO 1.9	9
1.9 TO 2.0	13
2.0 TO 2.4	17
2.4 TO 2.6	11
2.6 TO 2.8	4
2.8 TO 3.0	4
3.0 TO 3.5	2
3.5 TO 4.0	1
4.0 TO 4.5	2
OVER 4.5	1

TABLE 22f. NOON - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.79 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	3
10.0	TO	15.0	9
15.0	TO	20.0	7
20.0	TO	25.0	2
25.0	TO	30.0	0
30.0	TO	35.0	2
35.0	TO	40.0	2
40.0	TO	45.0	1
45.0	TO	50.0	0
50.0	TO	75.0	3
75.0	TO	100.0	1
100.0	TO	150.0	0
150.0	TO	200.0	1
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 31

89 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	3
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	3
17 TO 20	55 TO 65	6
20 TO 22	65 TO 72	2
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	2
26 TO 28	85 TO 91	4
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	2
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	3
71 TO 100	232 TO 328	2
OVER 100	OVER 328	1

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	5
1.3 TO 1.4	2
1.4 TO 1.5	1
1.5 TO 1.6	3
1.6 TO 1.7	7
1.7 TO 1.8	3
1.8 TO 1.9	1
1.9 TO 2.0	1
2.0 TO 2.4	3
2.4 TO 2.6	2
2.6 TO 2.8	0
2.8 TO 3.0	1
3.0 TO 3.5	1
3.5 TO 4.0	0
4.0 TO 4.5	1
OVER 4.5	0

ΣERIM

TABLE 23a. NOON - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.65 σ

3.5 - 3.9 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	42
10.0 TO	15.0	51
15.0 TO	20.0	10
20.0 TO	25.0	4
25.0 TO	30.0	0
30.0 TO	35.0	1
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 108

3898 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	4
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	14
17 TO 20	55 TO 65	15
20 TO 22	65 TO 72	20
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	18
26 TO 28	85 TO 91	13
28 TO 30	91 TO 98	8
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	8
39 TO 45	127 TO 147	2
45 TO 55	147 TO 180	4
55 TO 71	180 TO 232	1
71 TO 100	232 TO 328	1
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	4
1.3 TO 1.4	2
1.4 TO 1.5	0
1.5 TO 1.6	13
1.6 TO 1.7	4
1.7 TO 1.8	14
1.8 TO 1.9	10
1.9 TO 2.0	9
2.0 TO 2.4	40
2.4 TO 2.6	3
2.6 TO 2.8	3
2.8 TO 3.0	2
3.0 TO 3.5	4
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 23b. NOON - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.00 σ

3.5 - 3.9 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	7
10.0 TO	15.0	4
15.0 TO	20.0	0
20.0 TO	25.0	0
25.0 TO	30.0	0
30.0 TO	35.0	0
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 11

1670 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	0
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	0
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	1
17 TO	20	55 TO	65	4
20 TO	22	65 TO	72	3
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	2
26 TO	28	85 TO	91	1
28 TO	30	91 TO	98	0
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	0
39 TO	45	127 TO	147	0
45 TO	55	147 TO	180	0
55 TO	71	180 TO	232	0
71 TO	100	232 TO	328	0
OVER	100	OVER	328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	0
1.5 TO 1.6	1
1.6 TO 1.7	1
1.7 TO 1.8	3
1.8 TO 1.9	0
1.9 TO 2.0	1
2.0 TO 2.4	5
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

ERIM

TABLE 23c. NOON - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 2.17 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	22
10.0	TO	15.0	34
15.0	TO	20.0	18
20.0	TO	25.0	4
25.0	TO	30.0	5
30.0	TO	35.0	4
35.0	TO	40.0	1
40.0	TO	45.0	1
45.0	TO	50.0	1
50.0	TO	75.0	2
75.0	TO	100.0	0
100.0	TO	150.0	1
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 93

406 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	8
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	25
17 TO 20	55 TO 65	16
20 TO 22	65 TO 72	9
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	9
26 TO 28	85 TO 91	3
28 TO 30	91 TO 98	7
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	8
39 TO 45	127 TO 147	3
45 TO 55	147 TO 180	2
55 TO 71	180 TO 232	2
71 TO 100	232 TO 328	0
OVER 100	OVER 328	1

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	11
1.3 TO 1.4	15
1.4 TO 1.5	7
1.5 TO 1.6	15
1.6 TO 1.7	14
1.7 TO 1.8	11
1.8 TO 1.9	3
1.9 TO 2.0	5
2.0 TO 2.4	8
2.4 TO 2.6	2
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	1
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 23d. NOON - CONIFER AREA DISTRIBUTIONS

Threshold = Ave. + 2.79 σ

4.5 - 5.5 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS		FREQUENCY
8.0 TO	10.0	3
10.0 TO	15.0	3
15.0 TO	20.0	1
20.0 TO	25.0	1
25.0 TO	30.0	0
30.0 TO	35.0	0
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 8

67 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	1
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	4
17 TO 20	55 TO 65	0
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	1
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	0
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	2
1.3 TO 1.4	1
1.4 TO 1.5	0
1.5 TO 1.6	3
1.6 TO 1.7	0
1.7 TO 1.8	1
1.8 TO 1.9	0
1.9 TO 2.0	0
2.0 TO 2.4	1
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 23e. NOON - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.07 σ

9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	30
10.0 TO	15.0	28
15.0 TO	20.0	13
20.0 TO	25.0	6
25.0 TO	30.0	6
30.0 TO	35.0	1
35.0 TO	40.0	1
40.0 TO	45.0	4
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 89

500 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	10
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	20
17 TO 20	55 TO 65	16
20 TO 22	65 TO 72	10
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	7
26 TO 28	85 TO 91	3
28 TO 30	91 TO 98	4
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	13
39 TO 45	127 TO 147	2
45 TO 55	147 TO 180	4
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	12
1.3 TO 1.4	9
1.4 TO 1.5	2
1.5 TO 1.6	15
1.6 TO 1.7	8
1.7 TO 1.8	18
1.8 TO 1.9	7
1.9 TO 2.0	4
2.0 TO 2.4	13
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 23f. NOON - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.71 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	2
10.0	TO	15.0	1
15.0	TO	20.0	0
20.0	TO	25.0	0
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 3

59 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	1
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	2
17	TO	20	55	TO	65	0
20	TO	22	65	TO	72	0
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	0
26	TO	28	85	TO	91	0
28	TO	30	91	TO	98	0
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	0
39	TO	45	127	TO	147	0
45	TO	55	147	TO	180	0
55	TO	71	180	TO	232	0
71	TO	100	232	TO	328	0
OVER		100	OVER		328	0

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	1
1.3	TO	1.4	1
1.4	TO	1.5	0
1.5	TO	1.6	1
1.6	TO	1.7	0
1.7	TO	1.8	0
1.8	TO	1.9	0
1.9	TO	2.0	0
2.0	TO	2.4	0
2.4	TO	2.6	0
2.6	TO	2.8	0
2.8	TO	3.0	0
3.0	TO	3.5	0
3.5	TO	4.0	0
4.0	TO	4.5	0
	OVER	4.5	0

TABLE 24a. SUNSET - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.00 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	11
10.0	TO	15.0	27
15.0	TO	20.0	8
20.0	TO	25.0	7
25.0	TO	30.0	3
30.0	TO	35.0	4
35.0	TO	40.0	3
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	7
75.0	TO	100.0	3
100.0	TO	150.0	5
150.0	TO	200.0	2
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	1
	OVER	500.0	4

TOTAL NUMBER OF HOT SPOT = 85

114 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	5
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	8
17	TO	20	55	TO	65	11
20	TO	22	65	TO	72	12
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	7
26	TO	28	85	TO	91	8
28	TO	30	91	TO	98	3
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	5
39	TO	45	127	TO	147	4
45	TO	55	147	TO	180	4
55	TO	71	180	TO	232	3
71	TO	100	232	TO	328	7
	OVER	100		OVER	328	8

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	1
1.2	TO	1.3	7
1.3	TO	1.4	7
1.4	TO	1.5	9
1.5	TO	1.6	10
1.6	TO	1.7	6
1.7	TO	1.8	15
1.8	TO	1.9	3
1.9	TO	2.0	4
2.0	TO	2.4	11
2.4	TO	2.6	0
2.6	TO	2.8	3
2.8	TO	3.0	2
3.0	TO	3.5	1
3.5	TO	4.0	1
4.0	TO	4.5	3
	OVER	4.5	2

TABLE 24b. SUNSET - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.71 σ

4.5 - 5.5 μm

SQUARE METERS	FREQUENCY
8.0 TO 10.0	3
10.0 TO 15.0	1
15.0 TO 20.0	2
20.0 TO 25.0	2
25.0 TO 30.0	0
30.0 TO 35.0	0
35.0 TO 40.0	0
40.0 TO 45.0	0
45.0 TO 50.0	0
50.0 TO 75.0	0
75.0 TO 100.0	1
100.0 TO 150.0	0
150.0 TO 200.0	1
200.0 TO 250.0	0
250.0 TO 300.0	0
300.0 TO 400.0	0
400.0 TO 500.0	0
OVER 500.0	0

TOTAL NUMBER OF HOT SPOT = 10

19 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	2
17 TO 20	55 TO 65	2
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	1
OVER 100	OVER 328	1

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	2
1.4 TO 1.5	0
1.5 TO 1.6	2
1.6 TO 1.7	0
1.7 TO 1.8	2
1.8 TO 1.9	2
1.9 TO 2.0	0
2.0 TO 2.4	0
2.4 TO 2.6	0
2.6 TO 2.8	1
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	1
4.0 TO 4.5	0
OVER 4.5	0

TABLE 24c. SUNSET - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 1.69 σ
9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	8
10.0 TO	15.0	18
15.0 TO	20.0	11
20.0 TO	25.0	7
25.0 TO	30.0	5
30.0 TO	35.0	1
35.0 TO	40.0	4
40.0 TO	45.0	2
45.0 TO	50.0	4
50.0 TO	75.0	6
75.0 TO	100.0	3
100.0 TO	150.0	3
150.0 TO	200.0	1
200.0 TO	250.0	3
250.0 TO	300.0	1
300.0 TO	400.0	1
400.0 TO	500.0	1
OVER	500.0	4

TOTAL NUMBER OF HOT SPOT = 83

171 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	7
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	3
17 TO 20	55 TO 65	6
20 TO 22	65 TO 72	5
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	7
26 TO 28	85 TO 91	7
28 TO 30	91 TO 98	4
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	10
39 TO 45	127 TO 147	11
45 TO 55	147 TO 180	5
55 TO 71	180 TO 232	4
71 TO 100	232 TO 328	3
OVER 100	OVER 328	11

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	7
1.3 TO 1.4	5
1.4 TO 1.5	1
1.5 TO 1.6	4
1.6 TO 1.7	10
1.7 TO 1.8	16
1.8 TO 1.9	11
1.9 TO 2.0	7
2.0 TO 2.4	8
2.4 TO 2.6	3
2.6 TO 2.8	1
2.8 TO 3.0	0
3.0 TO 3.5	3
3.5 TO 4.0	1
4.0 TO 4.5	2
OVER 4.5	3

TABLE 24d. SUNSET - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.00 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	1
10.0	TO	15.0	7
15.0	TO	20.0	2
20.0	TO	25.0	1
25.0	TO	30.0	0
30.0	TO	35.0	1
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	2
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 14

28 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	4
20 TO 22	65 TO 72	3
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	2
28 TO 30	91 TO 98	1
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	1
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	2
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	0
1.3 TO 1.4	2
1.4 TO 1.5	3
1.5 TO 1.6	2
1.6 TO 1.7	0
1.7 TO 1.8	1
1.8 TO 1.9	3
1.9 TO 2.0	1
2.0 TO 2.4	1
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 25a. SUNSET - LAND AND WATER AREA DISTRIBUTIONS

Threshold = Ave. + 2.00 σ

4.5 - 5.5 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS			FREQUENCY
8.0	TO	10.0	10
10.0	TO	15.0	22
15.0	TO	20.0	24
20.0	TO	25.0	8
25.0	TO	30.0	4
30.0	TO	35.0	4
35.0	TO	40.0	4
40.0	TO	45.0	4
45.0	TO	50.0	1
50.0	TO	75.0	16
75.0	TO	100.0	4
100.0	TO	150.0	3
150.0	TO	200.0	2
200.0	TO	250.0	2
250.0	TO	300.0	1
300.0	TO	400.0	2
400.0	TO	500.0	0
	OVER	500.0	2

TOTAL NUMBER OF HOT SPOT = 113

191 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	3
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	11
17 TO 20	55 TO 65	9
20 TO 22	65 TO 72	6
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	14
26 TO 28	85 TO 91	9
28 TO 30	91 TO 98	8
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	12
39 TO 45	127 TO 147	6
45 TO 55	147 TO 180	7
55 TO 71	180 TO 232	11
71 TO 100	232 TO 328	9
OVER 100	OVER 328	8

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	6
1.3 TO 1.4	10
1.4 TO 1.5	3
1.5 TO 1.6	15
1.6 TO 1.7	11
1.7 TO 1.8	14
1.8 TO 1.9	10
1.9 TO 2.0	7
2.0 TO 2.4	15
2.4 TO 2.6	9
2.6 TO 2.8	2
2.8 TO 3.0	3
3.0 TO 3.5	3
3.5 TO 4.0	2
4.0 TO 4.5	0
OVER 4.5	3

TABLE 25b. SUNSET - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

Threshold = Ave. + 3.50 σ

4.5 - 5.5 μm

BY AREA

SQUARE METERS			FREQUENCY
8.0	TO	10.0	3
10.0	TO	15.0	5
15.0	TO	20.0	3
20.0	TO	25.0	1
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	1
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 13

31 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	1
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	3
17	TO	20	55	TO	65	5
20	TO	22	65	TO	72	1
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	0
26	TO	28	85	TO	91	0
28	TO	30	91	TO	98	1
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	1
39	TO	45	127	TO	147	1
45	TO	55	147	TO	180	0
55	TO	71	180	TO	232	0
71	TO	100	232	TO	328	0
OVER		100	OVER		328	0

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	5
1.3	TO	1.4	1
1.4	TO	1.5	0
1.5	TO	1.6	2
1.6	TO	1.7	1
1.7	TO	1.8	0
1.8	TO	1.9	3
1.9	TO	2.0	0
2.0	TO	2.4	1
2.4	TO	2.6	0
2.6	TO	2.8	0
2.8	TO	3.0	0
3.0	TO	3.5	0
3.5	TO	4.0	0
4.0	TO	4.5	0
	OVER	4.5	0

TABLE 25c. SUNSET - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.76 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	21
10.0	TO	15.0	27
15.0	TO	20.0	22
20.0	TO	25.0	8
25.0	TO	30.0	6
30.0	TO	35.0	7
35.0	TO	40.0	2
40.0	TO	45.0	1
45.0	TO	50.0	3
50.0	TO	75.0	9
75.0	TO	100.0	10
100.0	TO	150.0	5
150.0	TO	200.0	0
200.0	TO	250.0	2
250.0	TO	300.0	2
300.0	TO	400.0	0
400.0	TO	500.0	1
	OVER	500.0	3

TOTAL NUMBER OF HOT SPOT = 129

192 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	8
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	17
17	TO	20	55	TO	65	17
20	TO	22	65	TO	72	12
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	13
26	TO	28	85	TO	91	3
28	TO	30	91	TO	98	1
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	20
39	TO	45	127	TO	147	4
45	TO	55	147	TO	180	6
55	TO	71	180	TO	232	6
71	TO	100	232	TO	328	12
OVER		100	OVER		328	10

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	1
1.2	TO	1.3	10
1.3	TO	1.4	9
1.4	TO	1.5	12
1.5	TO	1.6	23
1.6	TO	1.7	15
1.7	TO	1.8	11
1.8	TO	1.9	8
1.9	TO	2.0	6
2.0	TO	2.4	15
2.4	TO	2.6	5
2.6	TO	2.8	6
2.8	TO	3.0	1
3.0	TO	3.5	1
3.5	TO	4.0	1
4.0	TO	4.5	1
	OVER	4.5	4

TABLE 25d. SUNSET - LAND AND WATER AREA DISTRIBUTIONS

Threshold = Ave. + 3.00 σ

9.0 - 11.4 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS	FREQUENCY
8.0 TO 10.0	2
10.0 TO 15.0	5
15.0 TO 20.0	4
20.0 TO 25.0	1
25.0 TO 30.0	1
30.0 TO 35.0	0
35.0 TO 40.0	0
40.0 TO 45.0	1
45.0 TO 50.0	1
50.0 TO 75.0	1
75.0 TO 100.0	0
100.0 TO 150.0	0
150.0 TO 200.0	0
200.0 TO 250.0	0
250.0 TO 300.0	0
300.0 TO 400.0	0
400.0 TO 500.0	0
OVER 500.0	0

TOTAL NUMBER OF HOT SPOT = 16

29 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	2
17 TO 20	55 TO 65	3
20 TO 22	65 TO 72	3
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	2
26 TO 28	85 TO 91	2
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	1
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	2
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	2
1.3 TO 1.4	2
1.4 TO 1.5	1
1.5 TO 1.6	1
1.6 TO 1.7	1
1.7 TO 1.8	3
1.8 TO 1.9	1
1.9 TO 2.0	1
2.0 TO 2.4	3
2.4 TO 2.6	1
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 26a. SUNSET - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 2.00 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	19
10.0	TO	15.0	39
15.0	TO	20.0	10
20.0	TO	25.0	11
25.0	TO	30.0	2
30.0	TO	35.0	5
35.0	TO	40.0	3
40.0	TO	45.0	2
45.0	TO	50.0	2
50.0	TO	75.0	4
75.0	TO	100.0	2
100.0	TO	150.0	1
150.0	TO	200.0	0
200.0	TO	250.0	1
250.0	TO	300.0	1
300.0	TO	400.0	0
400.0	TO	500.0	1
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 103

503 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	1
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	6
14 TO 16	45 TO 52	1
16 TO 17	52 TO 55	18
17 TO 20	55 TO 65	19
20 TO 22	65 TO 72	14
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	6
26 TO 28	85 TO 91	4
28 TO 30	91 TO 98	6
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	7
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	7
55 TO 71	180 TO 232	4
71 TO 100	232 TO 328	5
OVER 100	OVER 328	4

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	1
1.0 TO 1.1	1
1.1 TO 1.2	3
1.2 TO 1.3	5
1.3 TO 1.4	11
1.4 TO 1.5	7
1.5 TO 1.6	15
1.6 TO 1.7	8
1.7 TO 1.8	13
1.8 TO 1.9	8
1.9 TO 2.0	4
2.0 TO 2.4	10
2.4 TO 2.6	7
2.6 TO 2.8	3
2.8 TO 3.0	2
3.0 TO 3.5	3
3.5 TO 4.0	2
4.0 TO 4.5	0
OVER 4.5	0

TABLE 26b. SUNSET - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.24 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	1
10.0	TO	15.0	2
15.0	TO	20.0	3
20.0	TO	25.0	0
25.0	TO	30.0	0
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	1
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	1
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 8

21 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	0
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	1
17	TO	20	55	TO	65	2
20	TO	22	65	TO	72	0
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	2
26	TO	28	85	TO	91	0
28	TO	30	91	TO	98	0
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	1
39	TO	45	127	TO	147	0
45	TO	55	147	TO	180	0
55	TO	71	180	TO	232	0
71	TO	100	232	TO	328	0
OVER		100		OVER	328	2

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	1
1.3	TO	1.4	0
1.4	TO	1.5	0
1.5	TO	1.6	1
1.6	TO	1.7	2
1.7	TO	1.8	0
1.8	TO	1.9	0
1.9	TO	2.0	0
2.0	TO	2.4	2
2.4	TO	2.6	1
2.6	TO	2.8	0
2.8	TO	3.0	0
3.0	TO	3.5	1
3.5	TO	4.0	0
4.0	TO	4.5	0
	OVER	4.5	0

TABLE 26c. SUNSET - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.50 σ

9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	32
10.0 TO	15.0	56
15.0 TO	20.0	29
20.0 TO	25.0	20
25.0 TO	30.0	8
30.0 TO	35.0	6
35.0 TO	40.0	7
40.0 TO	45.0	8
45.0 TO	50.0	6
50.0 TO	75.0	12
75.0 TO	100.0	5
100.0 TO	150.0	6
150.0 TO	200.0	0
200.0 TO	250.0	1
250.0 TO	300.0	0
300.0 TO	400.0	3
400.0 TO	500.0	1
OVER	500.0	2

TOTAL NUMBER OF HOT SPOT = 202

542 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	1
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	21
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	36
17 TO	20	55 TO	65	19
20 TO	22	65 TO	72	22
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	15
26 TO	28	85 TO	91	16
28 TO	30	91 TO	98	8
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	16
39 TO	45	127 TO	147	11
45 TO	55	147 TO	180	12
55 TO	71	180 TO	232	8
71 TO	100	232 TO	328	8
OVER	100	OVER	328	9

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	2
1.0 TO 1.1	1
1.1 TO 1.2	11
1.2 TO 1.3	25
1.3 TO 1.4	27
1.4 TO 1.5	9
1.5 TO 1.6	26
1.6 TO 1.7	18
1.7 TO 1.8	21
1.8 TO 1.9	16
1.9 TO 2.0	6
2.0 TO 2.4	20
2.4 TO 2.6	6
2.6 TO 2.8	5
2.8 TO 3.0	1
3.0 TO 3.5	3
3.5 TO 4.0	0
4.0 TO 4.5	2
OVER 4.5	3

TABLE 26d. SUNSET - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.00 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	2
10.0	TO	15.0	2
15.0	TO	20.0	2
20.0	TO	25.0	0
25.0	TO	30.0	1
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	1
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	1
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 9

23 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	2
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	1
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	1
71 TO 100	232 TO 328	0
OVER 100	OVER 328	1

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	1
1.4 TO 1.5	1
1.5 TO 1.6	1
1.6 TO 1.7	2
1.7 TO 1.8	0
1.8 TO 1.9	1
1.9 TO 2.0	0
2.0 TO 2.4	1
2.4 TO 2.6	1
2.6 TO 2.8	1
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 27a. MIDNIGHT - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.50 σ

4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	24
10.0 TO	15.0	31
15.0 TO	20.0	19
20.0 TO	25.0	8
25.0 TO	30.0	4
30.0 TO	35.0	8
35.0 TO	40.0	4
40.0 TO	45.0	3
45.0 TO	50.0	4
50.0 TO	75.0	10
75.0 TO	100.0	6
100.0 TO	150.0	3
150.0 TO	200.0	2
200.0 TO	250.0	3
250.0 TO	300.0	1
300.0 TO	400.0	4
400.0 TO	500.0	0
OVER	500.0	3

TOTAL NUMBER OF HOT SPOT = 137

881 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS		FEET		FREQUENCY
0 TO	7	0 TO	22	0
7 TO	10	22 TO	32	1
10 TO	12	32 TO	39	0
12 TO	14	39 TO	45	3
14 TO	16	45 TO	52	0
16 TO	17	52 TO	55	17
17 TO	20	55 TO	65	11
20 TO	22	65 TO	72	7
22 TO	24	72 TO	78	0
24 TO	26	78 TO	85	15
26 TO	28	85 TO	91	7
28 TO	30	91 TO	98	7
30 TO	32	98 TO	104	0
32 TO	39	104 TO	127	14
39 TO	45	127 TO	147	12
45 TO	55	147 TO	180	10
55 TO	71	180 TO	232	5
71 TO	100	232 TO	328	12
OVER	100	OVER	328	16

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	1
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	6
1.3 TO 1.4	5
1.4 TO 1.5	4
1.5 TO 1.6	16
1.6 TO 1.7	6
1.7 TO 1.8	15
1.8 TO 1.9	7
1.9 TO 2.0	13
2.0 TO 2.4	27
2.4 TO 2.6	10
2.6 TO 2.8	9
2.8 TO 3.0	4
3.0 TO 3.5	2
3.5 TO 4.0	5
4.0 TO 4.5	2
OVER 4.5	5

TABLE 27b. MIDNIGHT - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.63 σ

4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	6
10.0 TO	15.0	3
15.0 TO	20.0	4
20.0 TO	25.0	3
25.0 TO	30.0	0
30.0 TO	35.0	1
35.0 TO	40.0	0
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 17

106 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	2
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	3
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	5
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	0
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	2
55 TO 71	180 TO 232	1
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	2
1.3 TO 1.4	0
1.4 TO 1.5	1
1.5 TO 1.6	2
1.6 TO 1.7	0
1.7 TO 1.8	5
1.8 TO 1.9	2
1.9 TO 2.0	0
2.0 TO 2.4	0
2.4 TO 2.6	2
2.6 TO 2.8	0
2.8 TO 3.0	1
3.0 TO 3.5	2
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 27c. MIDNIGHT - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 1.50 σ
9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	22
10.0 TO	15.0	32
15.0 TO	20.0	16
20.0 TO	25.0	9
25.0 TO	30.0	6
30.0 TO	35.0	11
35.0 TO	40.0	4
40.0 TO	45.0	3
45.0 TO	50.0	7
50.0 TO	75.0	5
75.0 TO	100.0	4
100.0 TO	150.0	1
150.0 TO	200.0	2
200.0 TO	250.0	2
250.0 TO	300.0	2
300.0 TO	400.0	0
400.0 TO	500.0	1
OVER	500.0	5

TOTAL NUMBER OF HOT SPOT = 132

354 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	11
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	8
17 TO 20	55 TO 65	13
20 TO 22	65 TO 72	15
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	5
26 TO 28	85 TO 91	9
28 TO 30	91 TO 98	4
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	21
39 TO 45	127 TO 147	6
45 TO 55	147 TO 180	13
55 TO 71	180 TO 232	12
71 TO 100	232 TO 328	3
OVER 100	OVER 328	12

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	12
1.3 TO 1.4	9
1.4 TO 1.5	4
1.5 TO 1.6	10
1.6 TO 1.7	9
1.7 TO 1.8	15
1.8 TO 1.9	11
1.9 TO 2.0	2
2.0 TO 2.4	36
2.4 TO 2.6	6
2.6 TO 2.8	4
2.8 TO 3.0	3
3.0 TO 3.5	4
3.5 TO 4.0	2
4.0 TO 4.5	1
OVER 4.5	4

TABLE 27d. MIDNIGHT - CITY AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.00 σ

9.0 - 11.4 μm

SQUARE METERS	FREQUENCY
8.0 TO 10.0	1
10.0 TO 15.0	4
15.0 TO 20.0	2
20.0 TO 25.0	1
25.0 TO 30.0	0
30.0 TO 35.0	1
35.0 TO 40.0	1
40.0 TO 45.0	0
45.0 TO 50.0	0
50.0 TO 75.0	1
75.0 TO 100.0	0
100.0 TO 150.0	0
150.0 TO 200.0	1
200.0 TO 250.0	0
250.0 TO 300.0	0
300.0 TO 400.0	0
400.0 TO 500.0	0
OVER 500.0	1

TOTAL NUMBER OF HOT SPOT = 13

37 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	4
20 TO 22	65 TO 72	2
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	2

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	1
1.3 TO 1.4	1
1.4 TO 1.5	0
1.5 TO 1.6	2
1.6 TO 1.7	1
1.7 TO 1.8	3
1.8 TO 1.9	0
1.9 TO 2.0	2
2.0 TO 2.4	1
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	1
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 28a. MIDNIGHT - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 3.00 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	9
10.0	TO	15.0	11
15.0	TO	20.0	12
20.0	TO	25.0	8
25.0	TO	30.0	2
30.0	TO	35.0	2
35.0	TO	40.0	2
40.0	TO	45.0	0
45.0	TO	50.0	2
50.0	TO	75.0	5
75.0	TO	100.0	4
100.0	TO	150.0	2
150.0	TO	200.0	2
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	1
400.0	TO	500.0	0
	OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 63

238 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	0
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	3
17	TO	20	55	TO	65	10
20	TO	22	65	TO	72	4
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	5
26	TO	28	85	TO	91	3
28	TO	30	91	TO	98	3
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	7
39	TO	45	127	TO	147	3
45	TO	55	147	TO	180	9
55	TO	71	180	TO	232	5
71	TO	100	232	TO	328	4
OVER		100	OVER		328	7

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	0
1.2	TO	1.3	0
1.3	TO	1.4	3
1.4	TO	1.5	1
1.5	TO	1.6	5
1.6	TO	1.7	5
1.7	TO	1.8	7
1.8	TO	1.9	3
1.9	TO	2.0	1
2.0	TO	2.4	18
2.4	TO	2.6	5
2.6	TO	2.8	1
2.8	TO	3.0	3
3.0	TO	3.5	6
3.5	TO	4.0	2
4.0	TO	4.5	0
	OVER	4.5	3

TABLE 28b. MIDNIGHT - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 4.87 σ
4.5 - 5.5 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	1
10.0 TO	15.0	5
15.0 TO	20.0	2
20.0 TO	25.0	1
25.0 TO	30.0	0
30.0 TO	35.0	0
35.0 TO	40.0	1
40.0 TO	45.0	0
45.0 TO	50.0	0
50.0 TO	75.0	0
75.0 TO	100.0	0
100.0 TO	150.0	0
150.0 TO	200.0	1
200.0 TO	250.0	0
250.0 TO	300.0	0
300.0 TO	400.0	0
400.0 TO	500.0	0
OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 11

53 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	1
17 TO 20	55 TO 65	1
20 TO 22	65 TO 72	2
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	4
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	1
39 TO 45	127 TO 147	0
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	1

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	1
1.3 TO 1.4	0
1.4 TO 1.5	2
1.5 TO 1.6	0
1.6 TO 1.7	1
1.7 TO 1.8	1
1.8 TO 1.9	1
1.9 TO 2.0	1
2.0 TO 2.4	3
2.4 TO 2.6	0
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	1
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 28c. MIDNIGHT - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT BY AREA

Threshold = Ave. + 3.00 σ
9.0 - 11.4 μm

SQUARE METERS		FREQUENCY
8.0 TO	10.0	1
10.0 TO	15.0	11
15.0 TO	20.0	6
20.0 TO	25.0	2
25.0 TO	30.0	3
30.0 TO	35.0	1
35.0 TO	40.0	0
40.0 TO	45.0	1
45.0 TO	50.0	0
50.0 TO	75.0	4
75.0 TO	100.0	5
100.0 TO	150.0	2
150.0 TO	200.0	0
200.0 TO	250.0	0
250.0 TO	300.0	1
300.0 TO	400.0	1
400.0 TO	500.0	0
OVER	500.0	3

TOTAL NUMBER OF HOT SPOT = 41

99 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	2
17 TO 20	55 TO 65	5
20 TO 22	65 TO 72	6
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	1
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	3
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	3
39 TO 45	127 TO 147	4
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	4
71 TO 100	232 TO 328	3
OVER 100	OVER 328	8

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	1
1.3 TO 1.4	1
1.4 TO 1.5	3
1.5 TO 1.6	3
1.6 TO 1.7	3
1.7 TO 1.8	2
1.8 TO 1.9	3
1.9 TO 2.0	2
2.0 TO 2.4	9
2.4 TO 2.6	3
2.6 TO 2.8	2
2.8 TO 3.0	0
3.0 TO 3.5	2
3.5 TO 4.0	2
4.0 TO 4.5	0
OVER 4.5	4

TABLE 28d. MIDNIGHT - LAND AND WATER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

Threshold = Ave. + 5.15 σ

BY AREA

9.0 - 11.4 μm

SQUARE METERS	FREQUENCY
8.0 TO 10.0	0
10.0 TO 15.0	3
15.0 TO 20.0	0
20.0 TO 25.0	1
25.0 TO 30.0	2
30.0 TO 35.0	1
35.0 TO 40.0	0
40.0 TO 45.0	1
45.0 TO 50.0	0
50.0 TO 75.0	2
75.0 TO 100.0	0
100.0 TO 150.0	0
150.0 TO 200.0	0
200.0 TO 250.0	0
250.0 TO 300.0	0
300.0 TO 400.0	0
400.0 TO 500.0	0
OVER 500.0	0

TOTAL NUMBER OF HOT SPOT = 10

19 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	0
17 TO 20	55 TO 65	2
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	1
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	3
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	1
71 TO 100	232 TO 328	1
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	2
1.5 TO 1.6	2
1.6 TO 1.7	1
1.7 TO 1.8	0
1.8 TO 1.9	2
1.9 TO 2.0	0
2.0 TO 2.4	2
2.4 TO 2.6	1
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 29a. MIDNIGHT - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.40 σ

4.5 - 5.5 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	54
10.0	TO	15.0	63
15.0	TO	20.0	22
20.0	TO	25.0	11
25.0	TO	30.0	6
30.0	TO	35.0	3
35.0	TO	40.0	0
40.0	TO	45.0	1
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	3
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 163

2422 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	15
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	29
17 TO 20	55 TO 65	36
20 TO 22	65 TO 72	18
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	9
26 TO 28	85 TO 91	15
28 TO 30	91 TO 98	6
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	22
39 TO 45	127 TO 147	2
45 TO 55	147 TO 180	7
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	1
OVER 100	OVER 328	3

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	2
1.2 TO 1.3	17
1.3 TO 1.4	12
1.4 TO 1.5	3
1.5 TO 1.6	20
1.6 TO 1.7	13
1.7 TO 1.8	31
1.8 TO 1.9	10
1.9 TO 2.0	10
2.0 TO 2.4	26
2.4 TO 2.6	10
2.6 TO 2.8	4
2.8 TO 3.0	2
3.0 TO 3.5	2
3.5 TO 4.0	1
4.0 TO 4.5	0
OVER 4.5	0

TABLE 29b. MIDNIGHT - CONIFER AREA DISTRIBUTIONS

Threshold = Ave. + 2.00 σ

4.5 - 5.5 μm

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

SQUARE METERS			FREQUENCY
8.0	TO	10.0	0
10.0	TO	15.0	3
15.0	TO	20.0	1
20.0	TO	25.0	2
25.0	TO	30.0	1
30.0	TO	35.0	0
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	0
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 7

139 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	0
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	0
17 TO 20	55 TO 65	1
20 TO 22	65 TO 72	3
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	0
26 TO 28	85 TO 91	0
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	1
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	1
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	0
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	0
1.2 TO 1.3	0
1.3 TO 1.4	0
1.4 TO 1.5	0
1.5 TO 1.6	1
1.6 TO 1.7	1
1.7 TO 1.8	1
1.8 TO 1.9	1
1.9 TO 2.0	1
2.0 TO 2.4	1
2.4 TO 2.6	1
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	0
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

TABLE 29c. MIDNIGHT - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.19 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	45
10.0	TO	15.0	80
15.0	TO	20.0	49
20.0	TO	25.0	32
25.0	TO	30.0	12
30.0	TO	35.0	11
35.0	TO	40.0	5
40.0	TO	45.0	6
45.0	TO	50.0	2
50.0	TO	75.0	12
75.0	TO	100.0	3
100.0	TO	150.0	1
150.0	TO	200.0	1
200.0	TO	250.0	1
250.0	TO	300.0	1
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	1

TOTAL NUMBER OF HOT SPOT = 262

1188 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

METERS			FEET			FREQUENCY
0	TO	7	0	TO	22	0
7	TO	10	22	TO	32	0
10	TO	12	32	TO	39	0
12	TO	14	39	TO	45	13
14	TO	16	45	TO	52	0
16	TO	17	52	TO	55	31
17	TO	20	55	TO	65	45
20	TO	22	65	TO	72	25
22	TO	24	72	TO	78	0
24	TO	26	78	TO	85	27
26	TO	28	85	TO	91	20
28	TO	30	91	TO	98	16
30	TO	32	98	TO	104	0
32	TO	39	104	TO	127	29
39	TO	45	127	TO	147	16
45	TO	55	147	TO	180	17
55	TO	71	180	TO	232	6
71	TO	100	232	TO	328	10
OVER		100	OVER		328	7

BY SHAPE

SHAPE FACTOR			FREQUENCY
0.0	TO	1.0	0
1.0	TO	1.1	0
1.1	TO	1.2	4
1.2	TO	1.3	17
1.3	TO	1.4	17
1.4	TO	1.5	10
1.5	TO	1.6	30
1.6	TO	1.7	32
1.7	TO	1.8	37
1.8	TO	1.9	15
1.9	TO	2.0	25
2.0	TO	2.4	43
2.4	TO	2.6	9
2.6	TO	2.8	8
2.8	TO	3.0	5
3.0	TO	3.5	5
3.5	TO	4.0	2
4.0	TO	4.5	2
	OVER	4.5	1

TABLE 29d. MIDNIGHT - CONIFER AREA DISTRIBUTIONS

DISTRIBUTION OF RECOGNIZED HOT SPOT

BY AREA

Threshold = Ave. + 1.50 σ

9.0 - 11.4 μm

SQUARE METERS			FREQUENCY
8.0	TO	10.0	5
10.0	TO	15.0	5
15.0	TO	20.0	1
20.0	TO	25.0	1
25.0	TO	30.0	1
30.0	TO	35.0	1
35.0	TO	40.0	0
40.0	TO	45.0	0
45.0	TO	50.0	1
50.0	TO	75.0	0
75.0	TO	100.0	0
100.0	TO	150.0	0
150.0	TO	200.0	0
200.0	TO	250.0	0
250.0	TO	300.0	0
300.0	TO	400.0	0
400.0	TO	500.0	0
	OVER	500.0	0

TOTAL NUMBER OF HOT SPOT = 15

199 FEATURES WITH AREAS LESS THAN 8.00 SQ. METERS WERE ALSO RECOGNIZED

BY PERIMETER

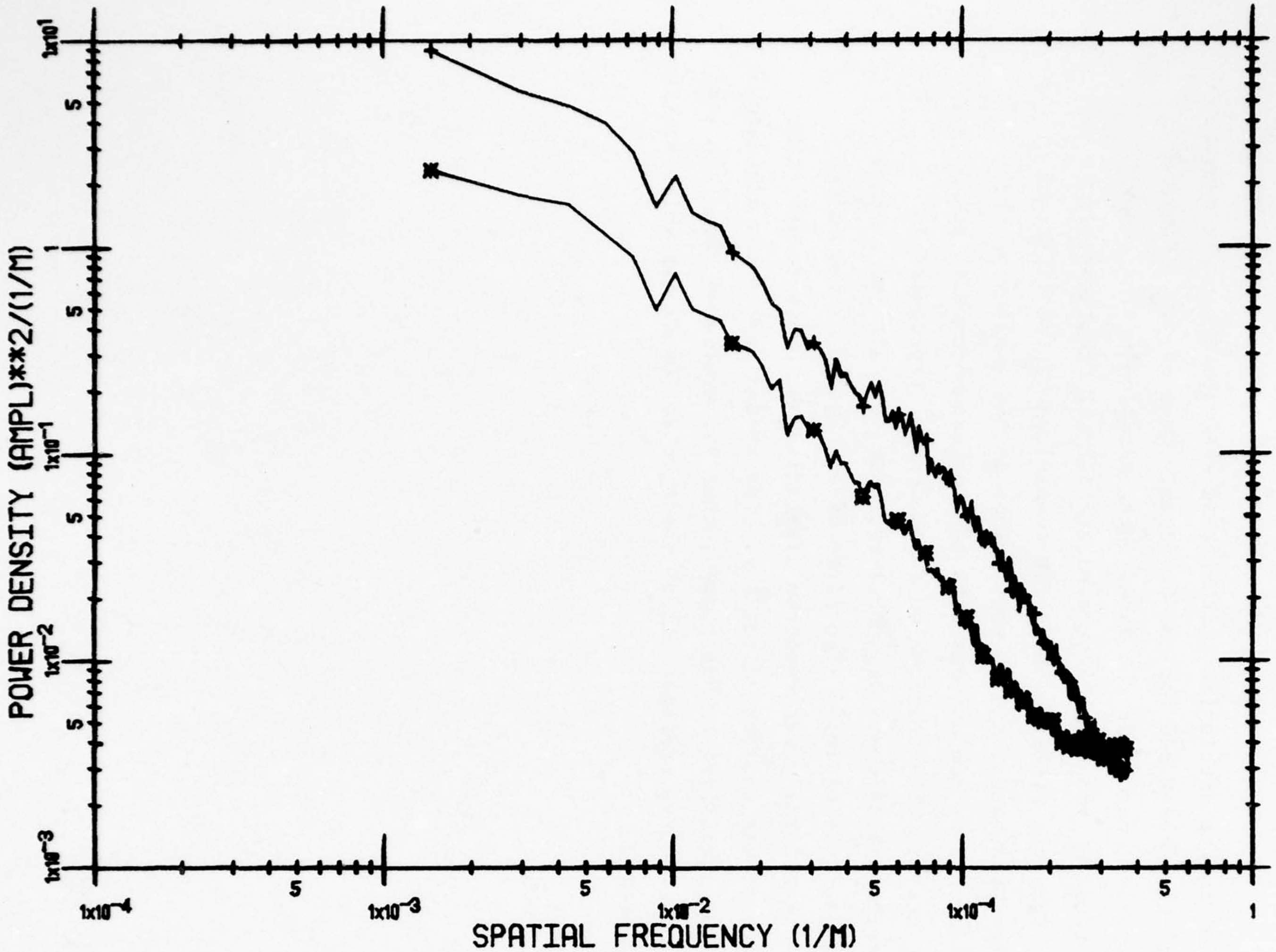
METERS	FEET	FREQUENCY
0 TO 7	0 TO 22	0
7 TO 10	22 TO 32	0
10 TO 12	32 TO 39	0
12 TO 14	39 TO 45	3
14 TO 16	45 TO 52	0
16 TO 17	52 TO 55	2
17 TO 20	55 TO 65	2
20 TO 22	65 TO 72	1
22 TO 24	72 TO 78	0
24 TO 26	78 TO 85	2
26 TO 28	85 TO 91	1
28 TO 30	91 TO 98	0
30 TO 32	98 TO 104	0
32 TO 39	104 TO 127	2
39 TO 45	127 TO 147	1
45 TO 55	147 TO 180	0
55 TO 71	180 TO 232	0
71 TO 100	232 TO 328	1
OVER 100	OVER 328	0

BY SHAPE

SHAPE FACTOR	FREQUENCY
0.0 TO 1.0	0
1.0 TO 1.1	0
1.1 TO 1.2	1
1.2 TO 1.3	2
1.3 TO 1.4	2
1.4 TO 1.5	0
1.5 TO 1.6	1
1.6 TO 1.7	0
1.7 TO 1.8	3
1.8 TO 1.9	1
1.9 TO 2.0	2
2.0 TO 2.4	1
2.4 TO 2.6	1
2.6 TO 2.8	0
2.8 TO 3.0	0
3.0 TO 3.5	1
3.5 TO 4.0	0
4.0 TO 4.5	0
OVER 4.5	0

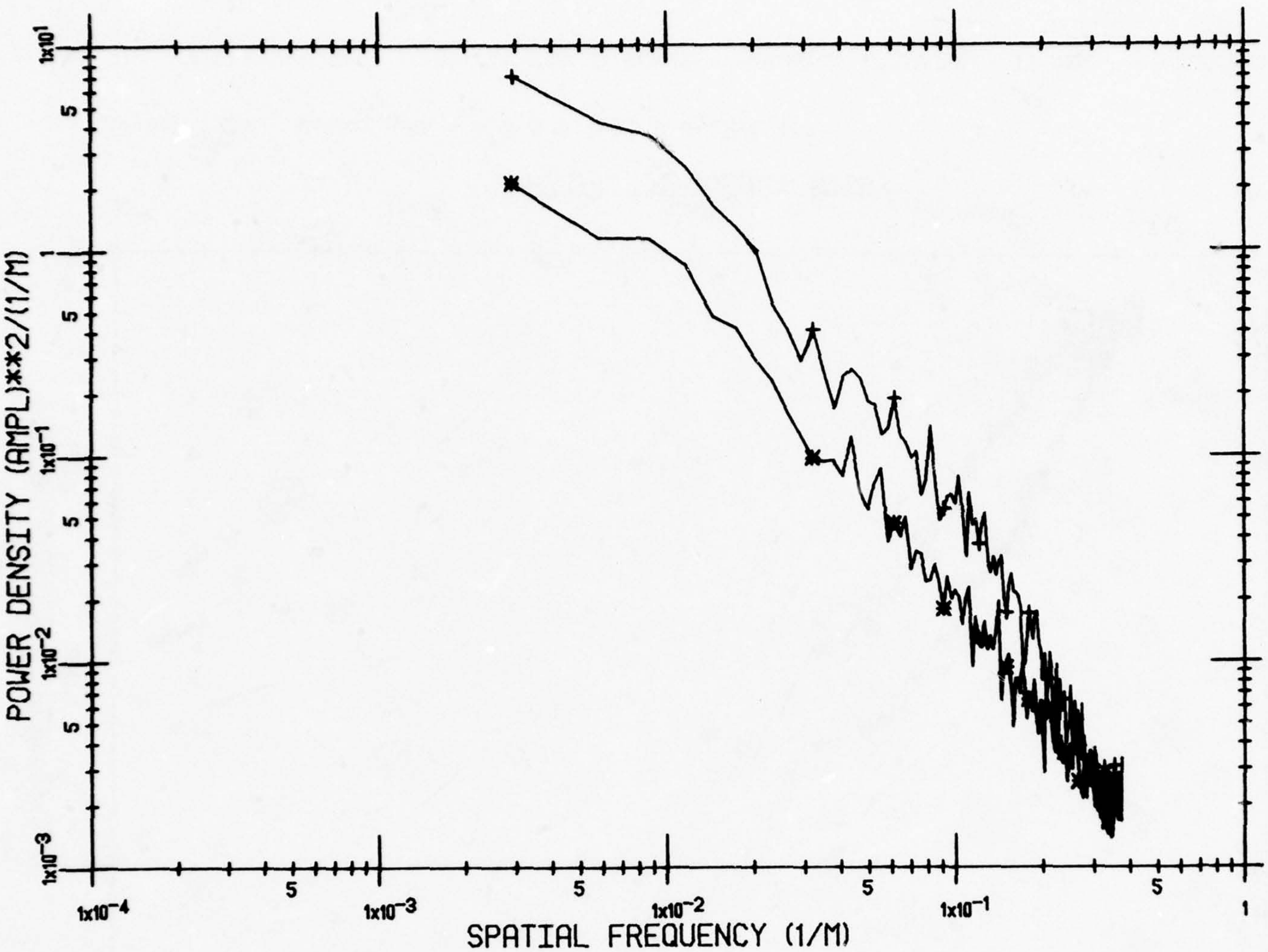
5
POWER SPECTRA

Included in the statistics of the areas analyzed are power spectra from each of the scenes and for the different times of day. Considering the multimodal nature of the data, interpretation of the power spectra in terms of known, well-behaved statistical functions, is difficult. They are presented here for comparison of the different areas and spectral bands, and to show trends in the quality of the data, as discerned by comparisons with the corresponding histograms of the same scenes. The abscissa on these curves, reproduced in Figures 41a through 56d, are in (AMPL)**2, which for all the thermal spectral bands, is $(\text{Kelvin})^2$. The first of each group of two curves is the one-dimensional power spectrum identified as "cross-track", that is, evaluated across the scan direction. The second is the one-dimensional power spectrum identified as "in-track", that is, evaluated along the scan direction. Each curve contains all of the spectral bands for which statistics were computed.



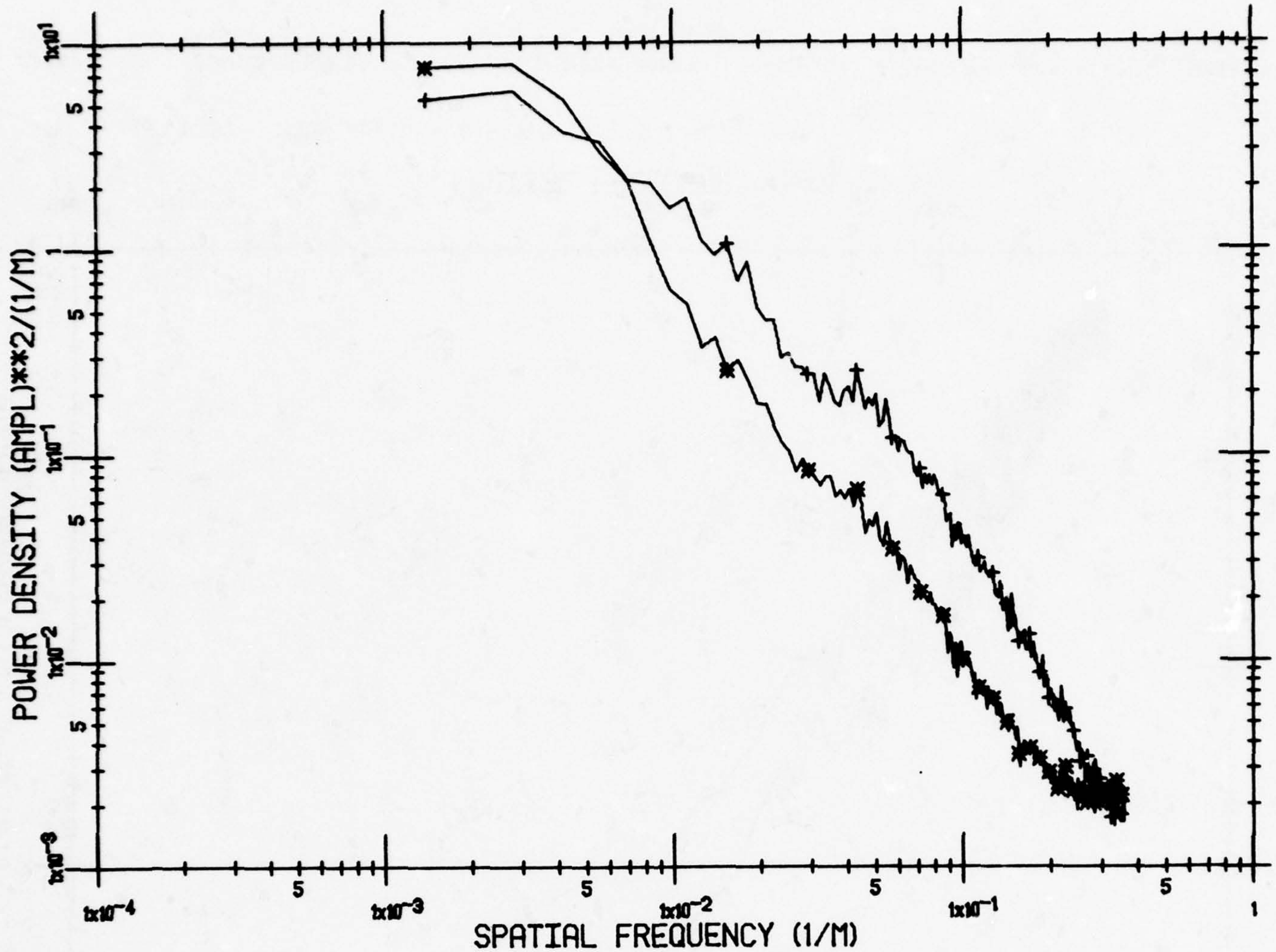
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 41a. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - CROSSTRACK



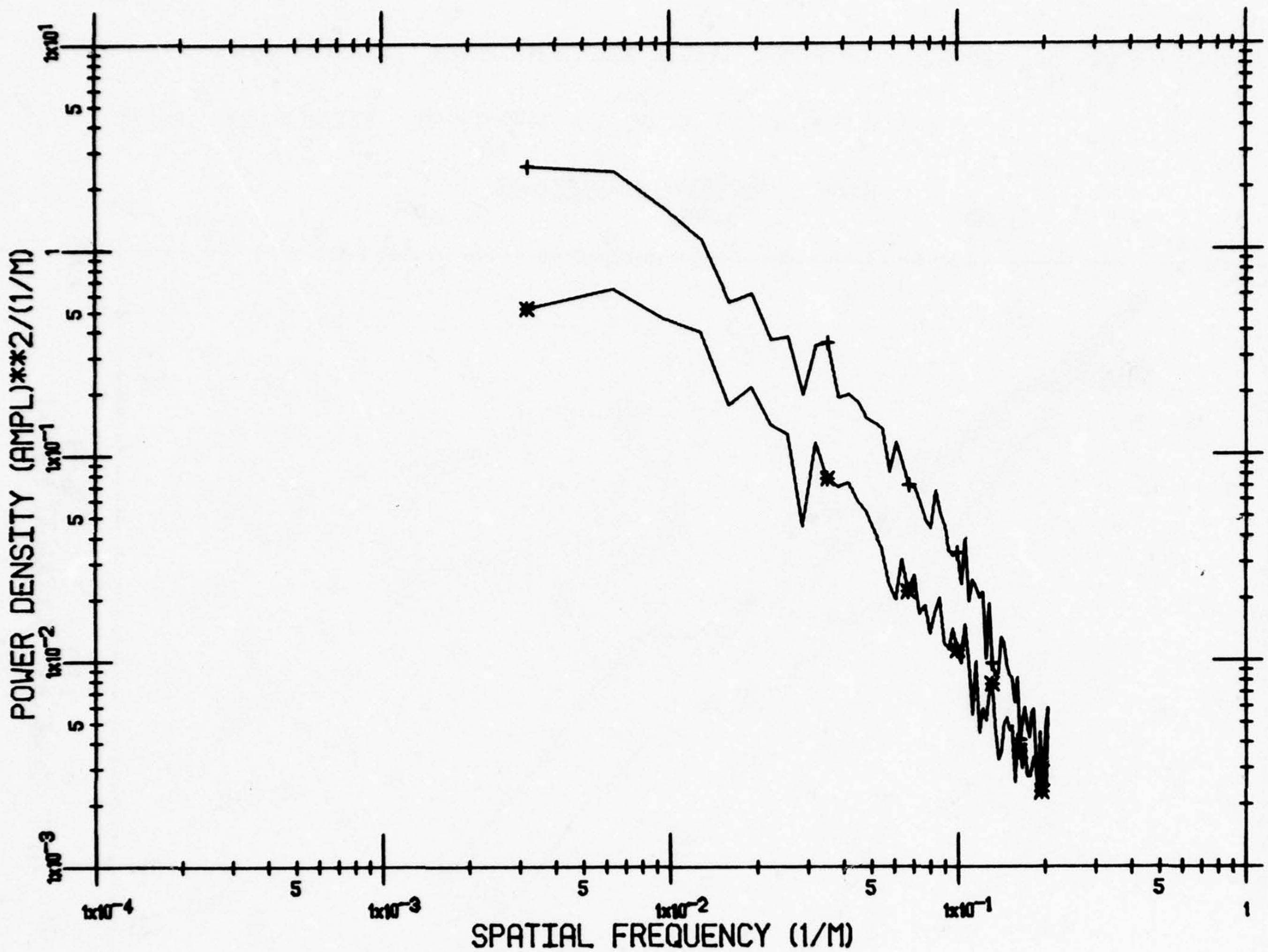
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 41b. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - INTRACK



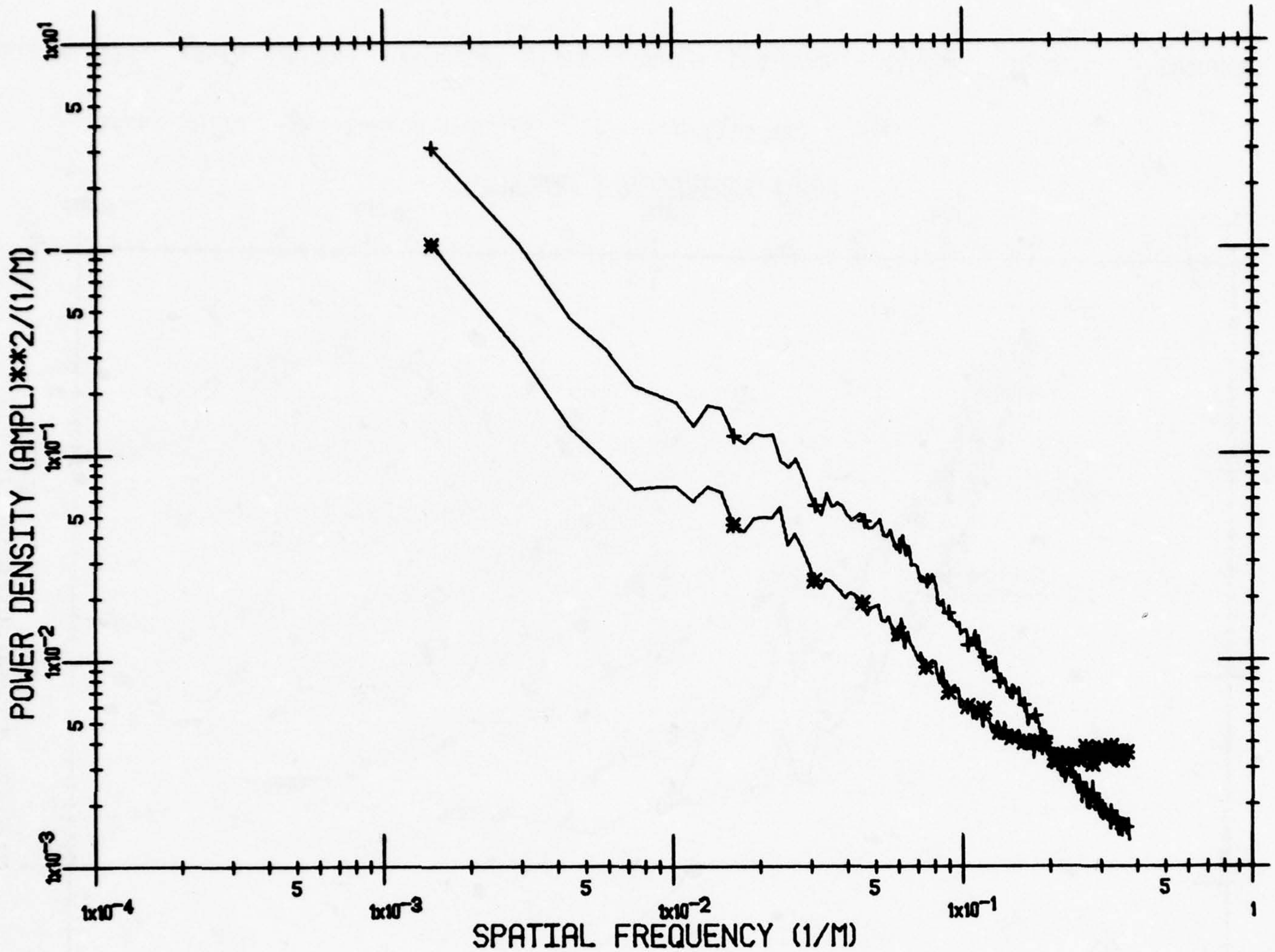
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 41c. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - CROSSTRACK



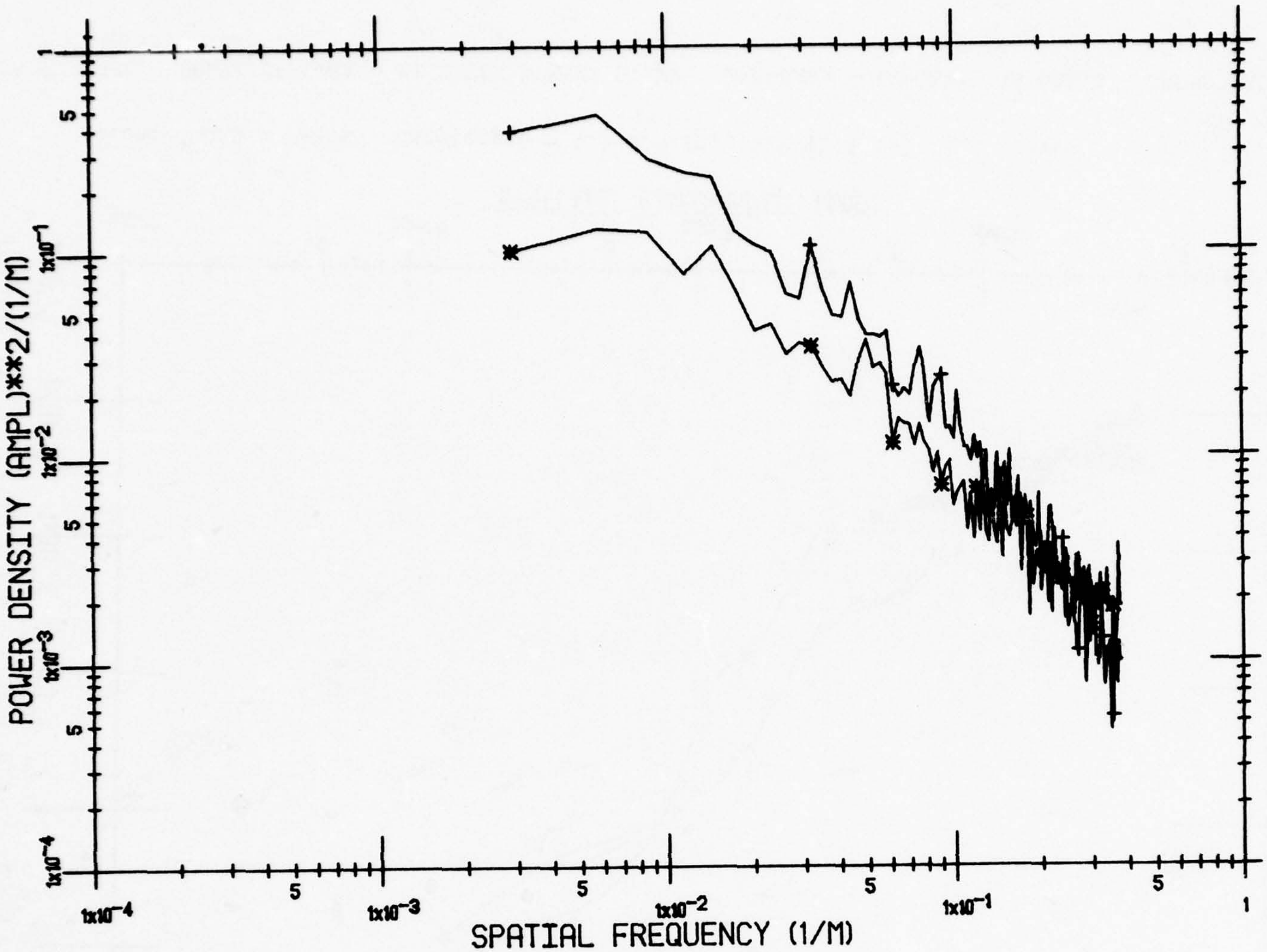
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 41d. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - INTRACK



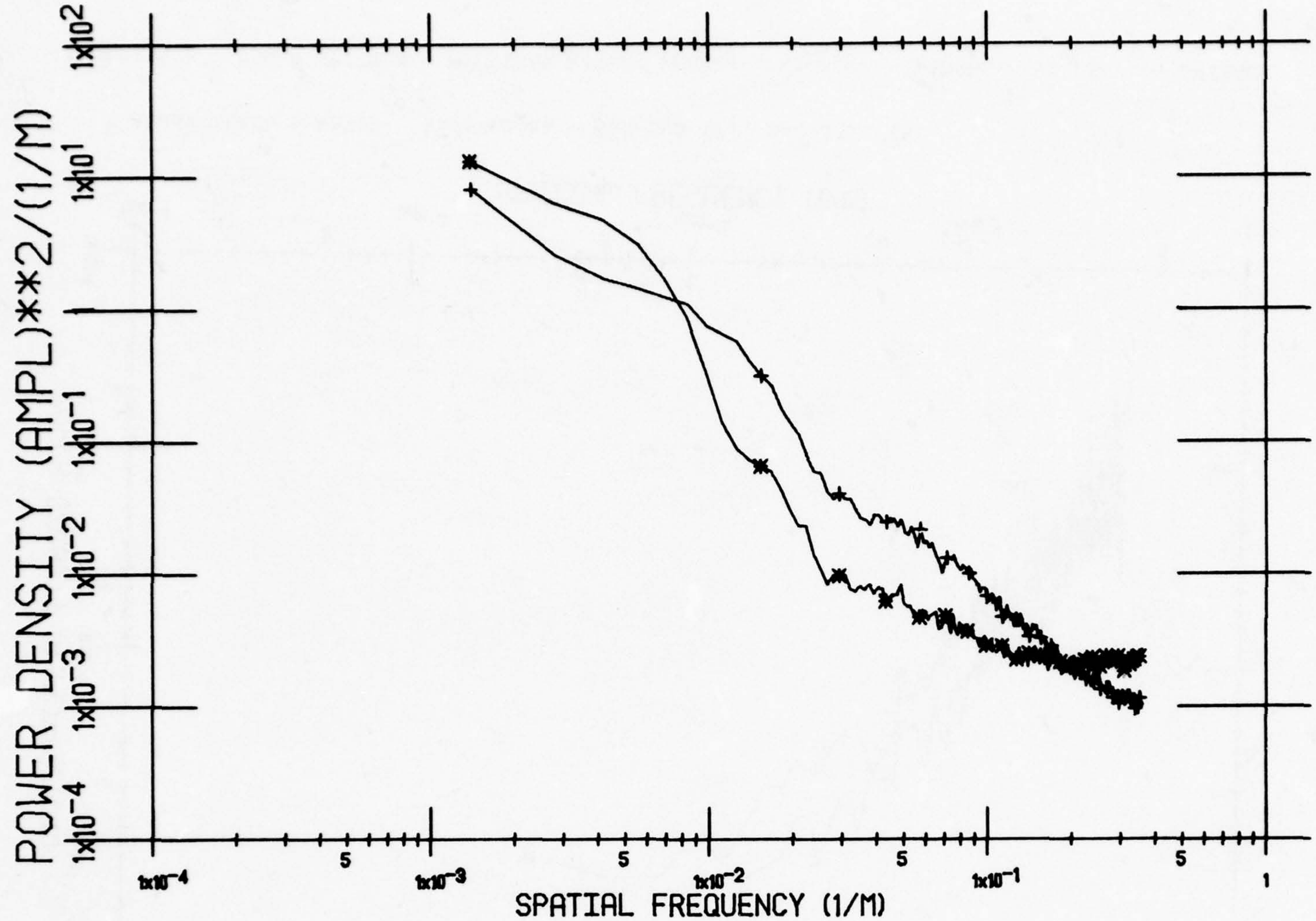
Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 42a. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - CROSSTRACK



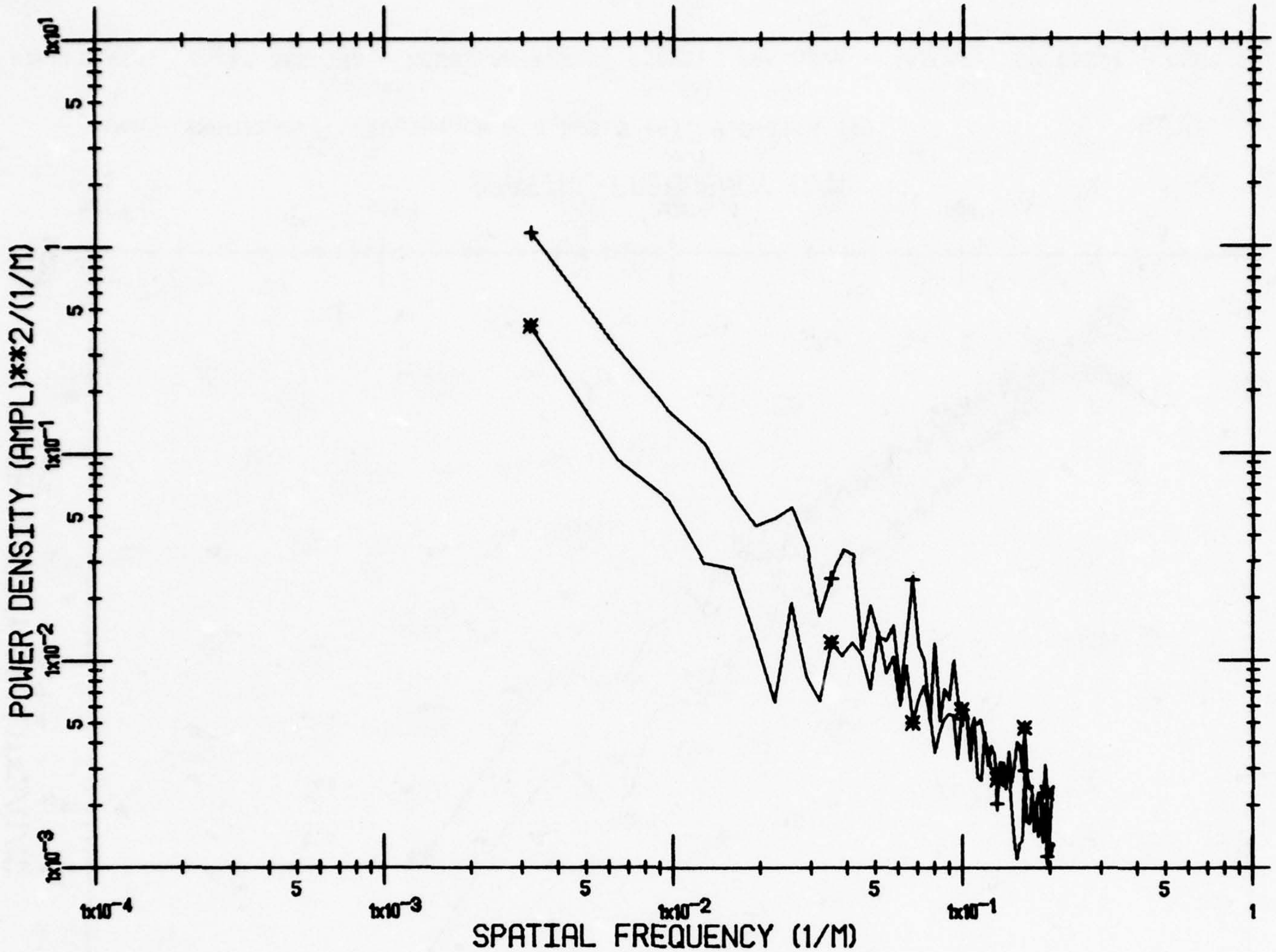
Area: LAND & WATER   Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 42b. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - INTRACK



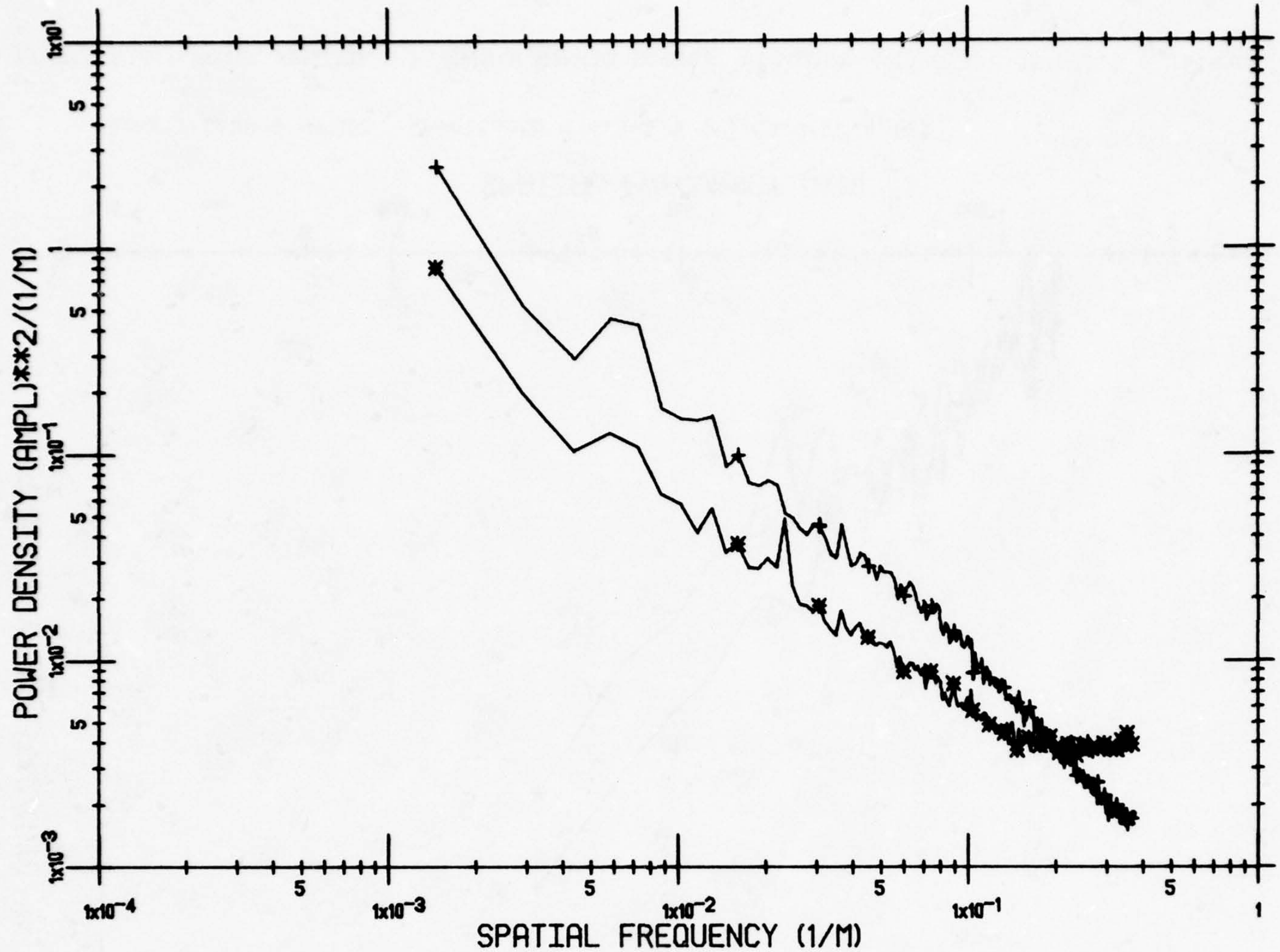
Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 42c. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - CROSSTRACK



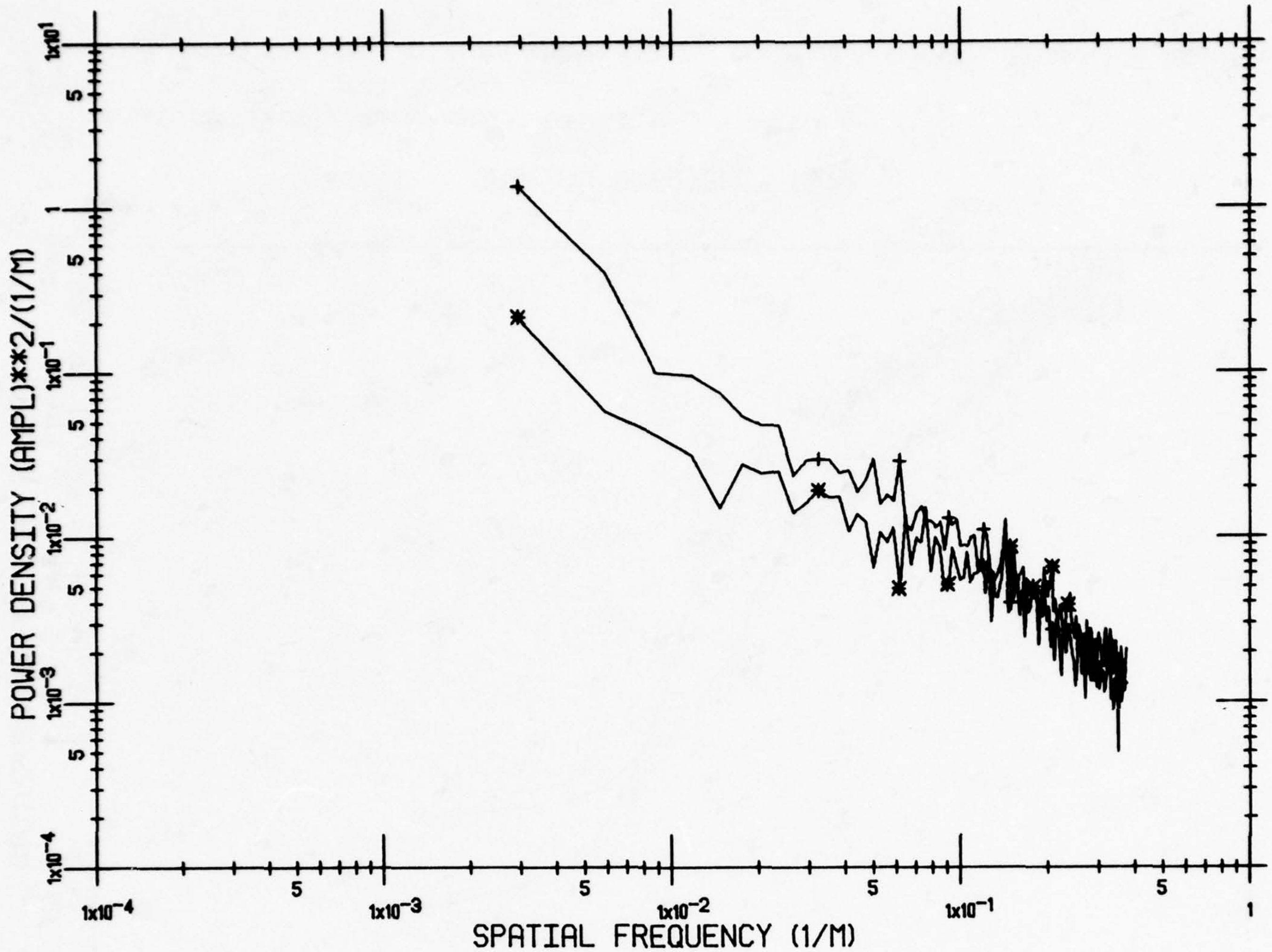
Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 42d. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - INTRACK



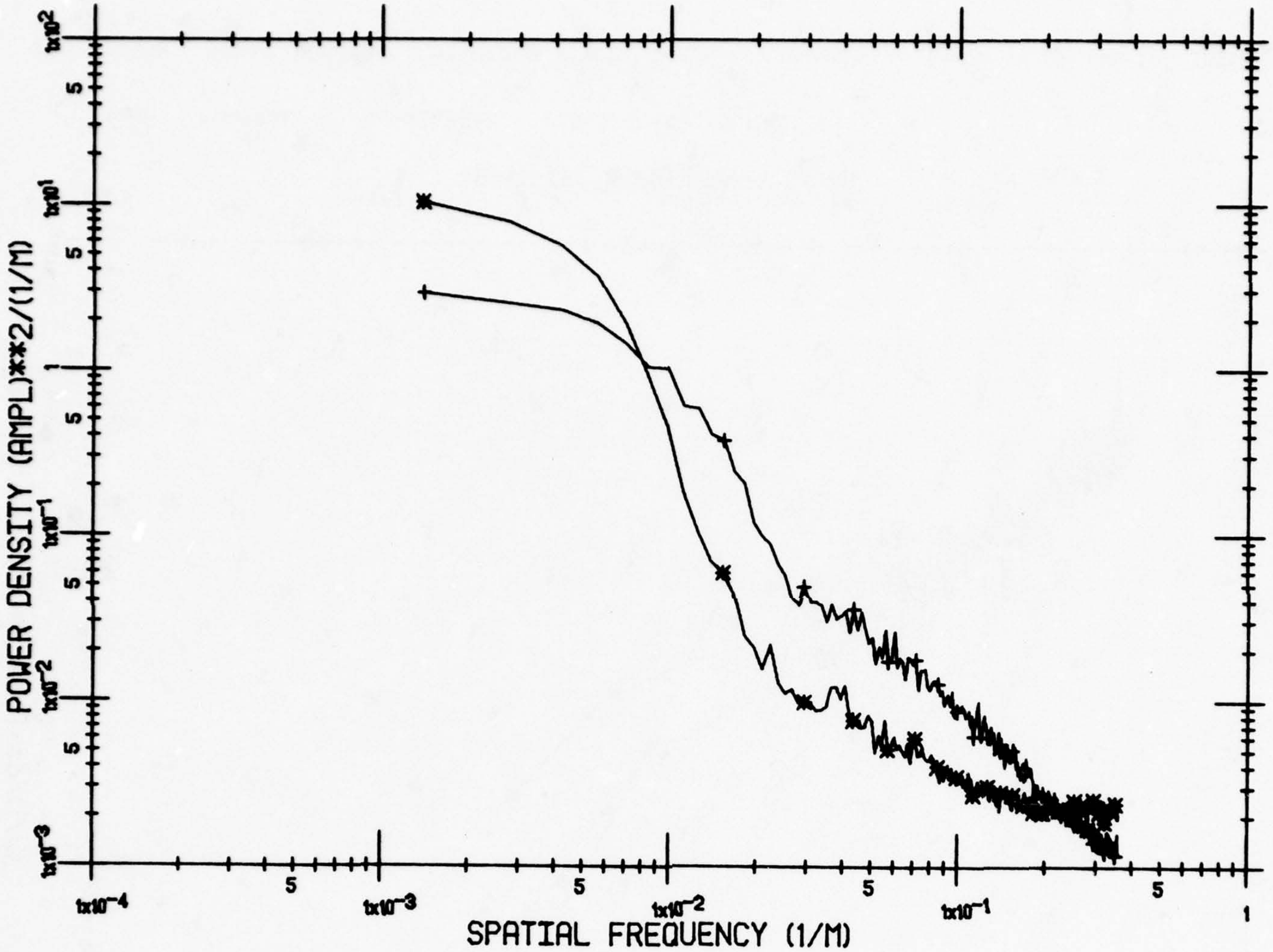
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 43a. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - CROSSTRACK



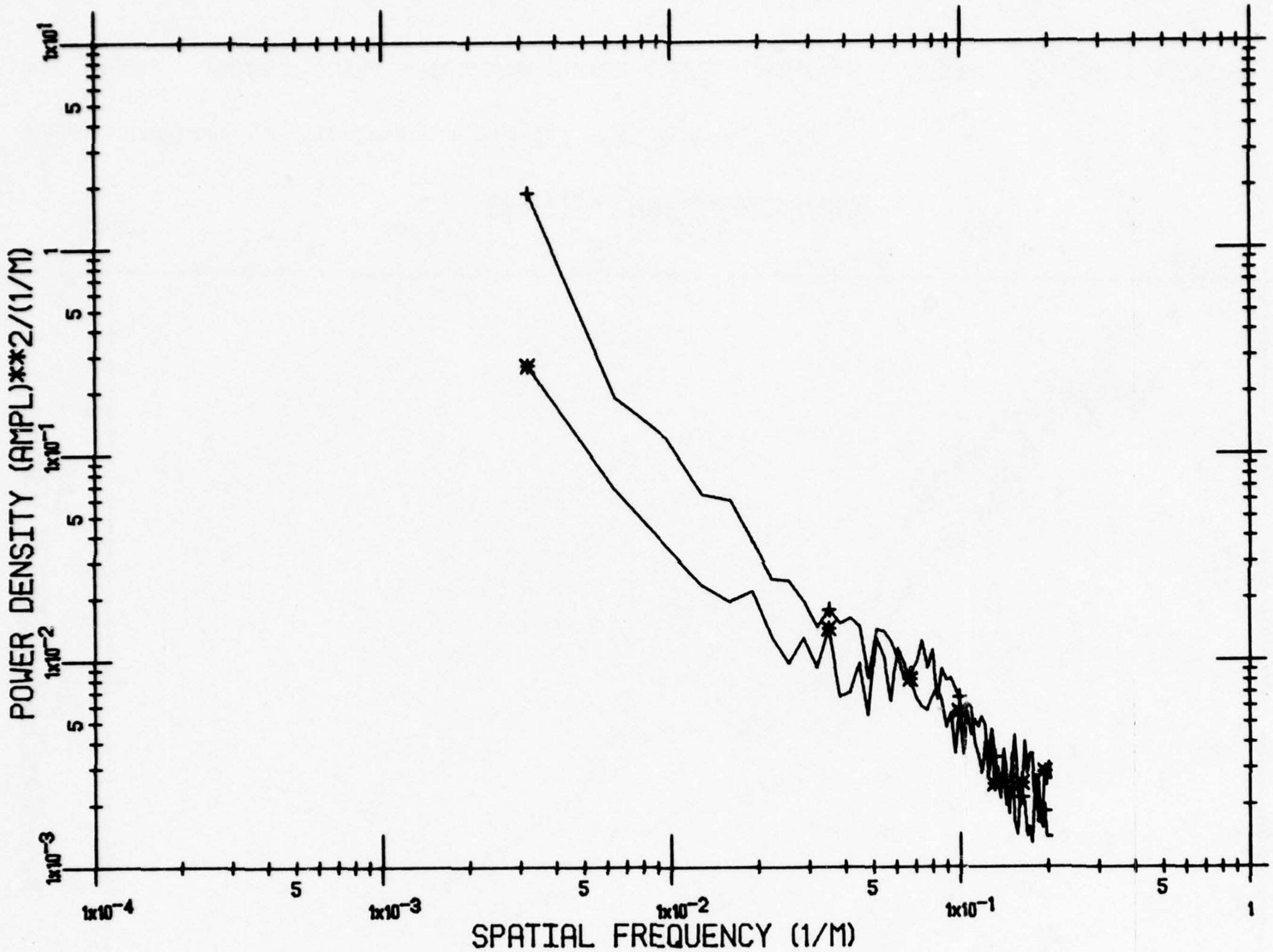
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 43b. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - INTRACK



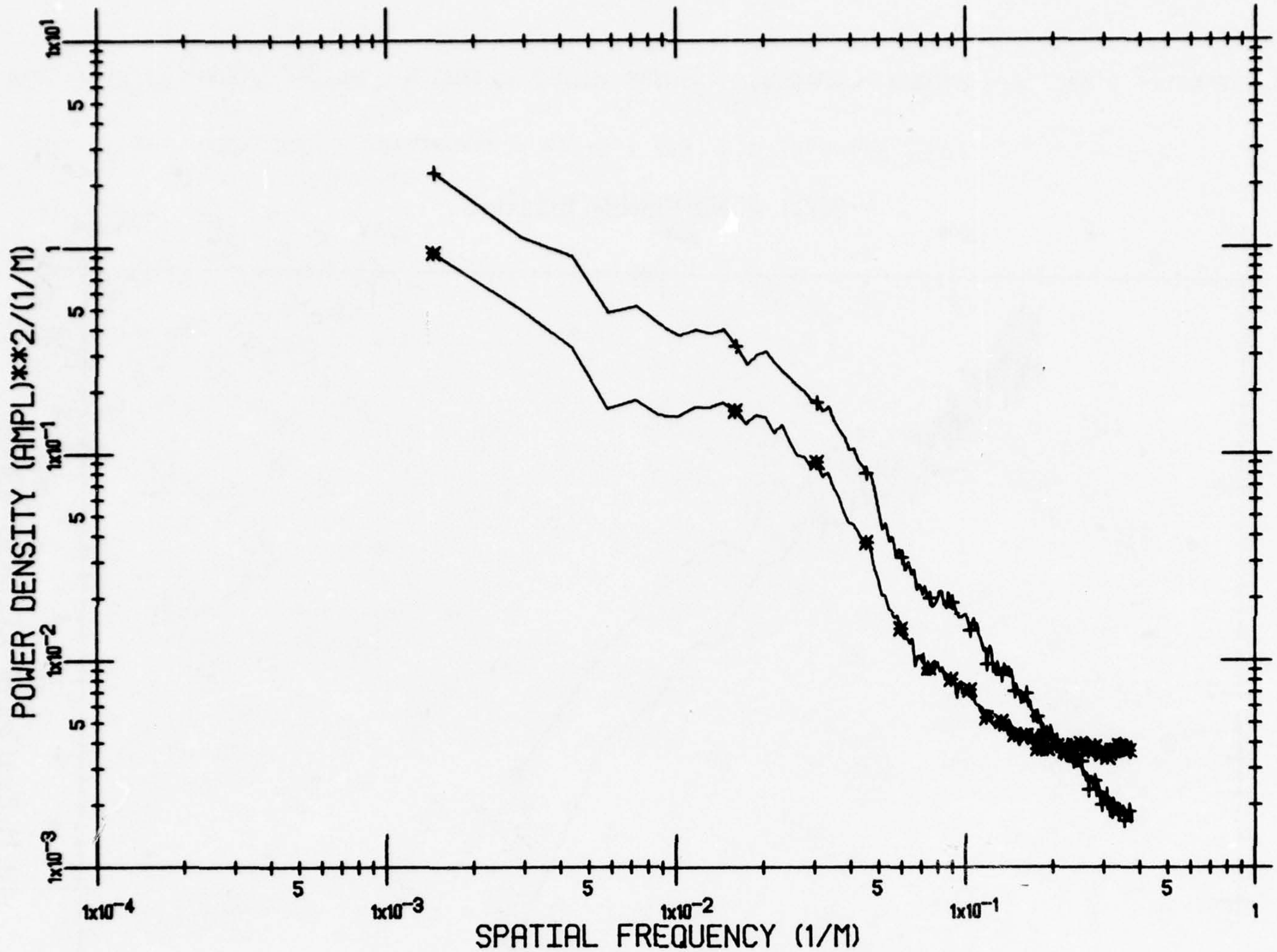
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 43c. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - CROSSTRACK



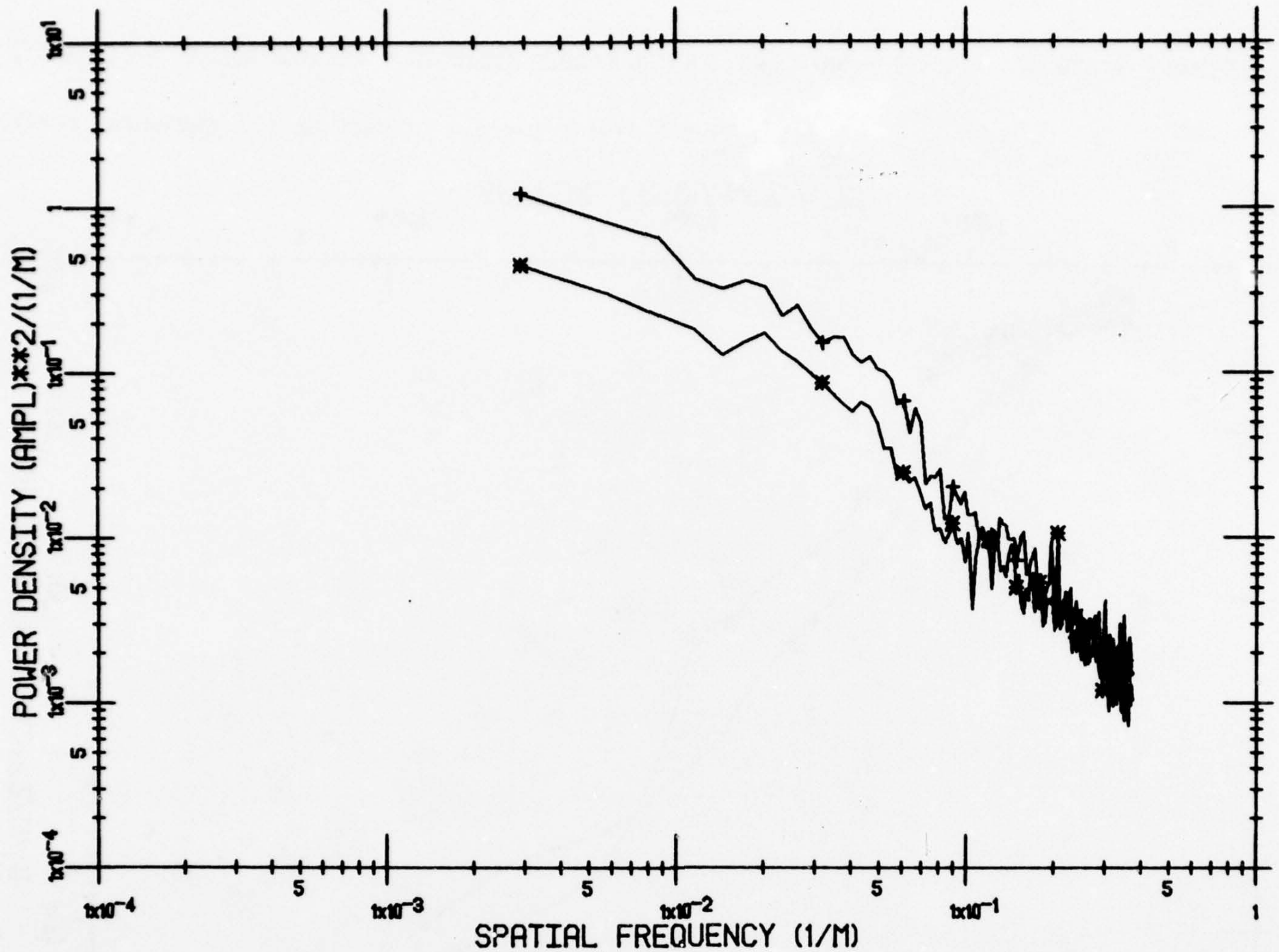
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 43d. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - INTRACK



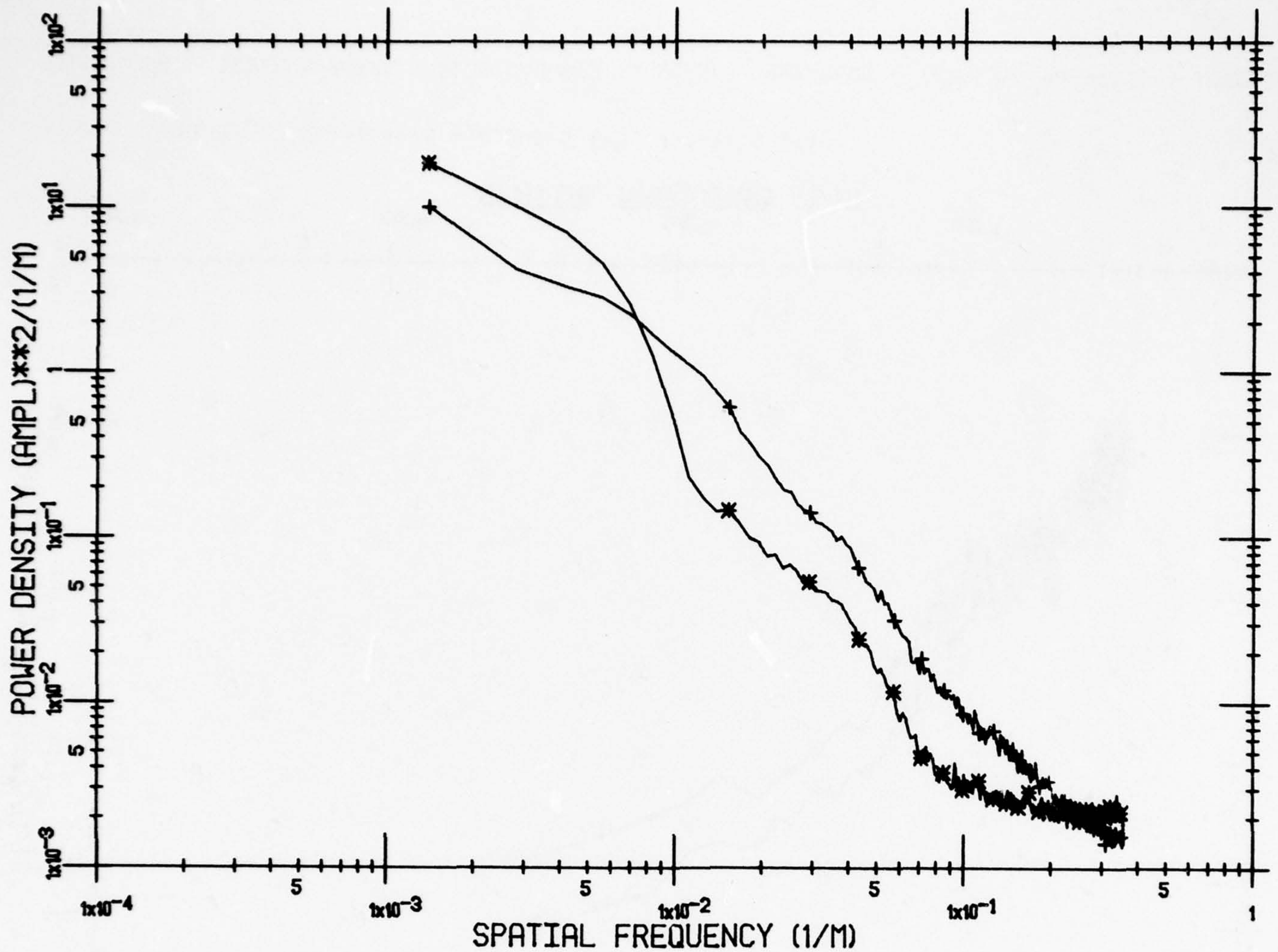
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 44a. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - CROSSTRACK



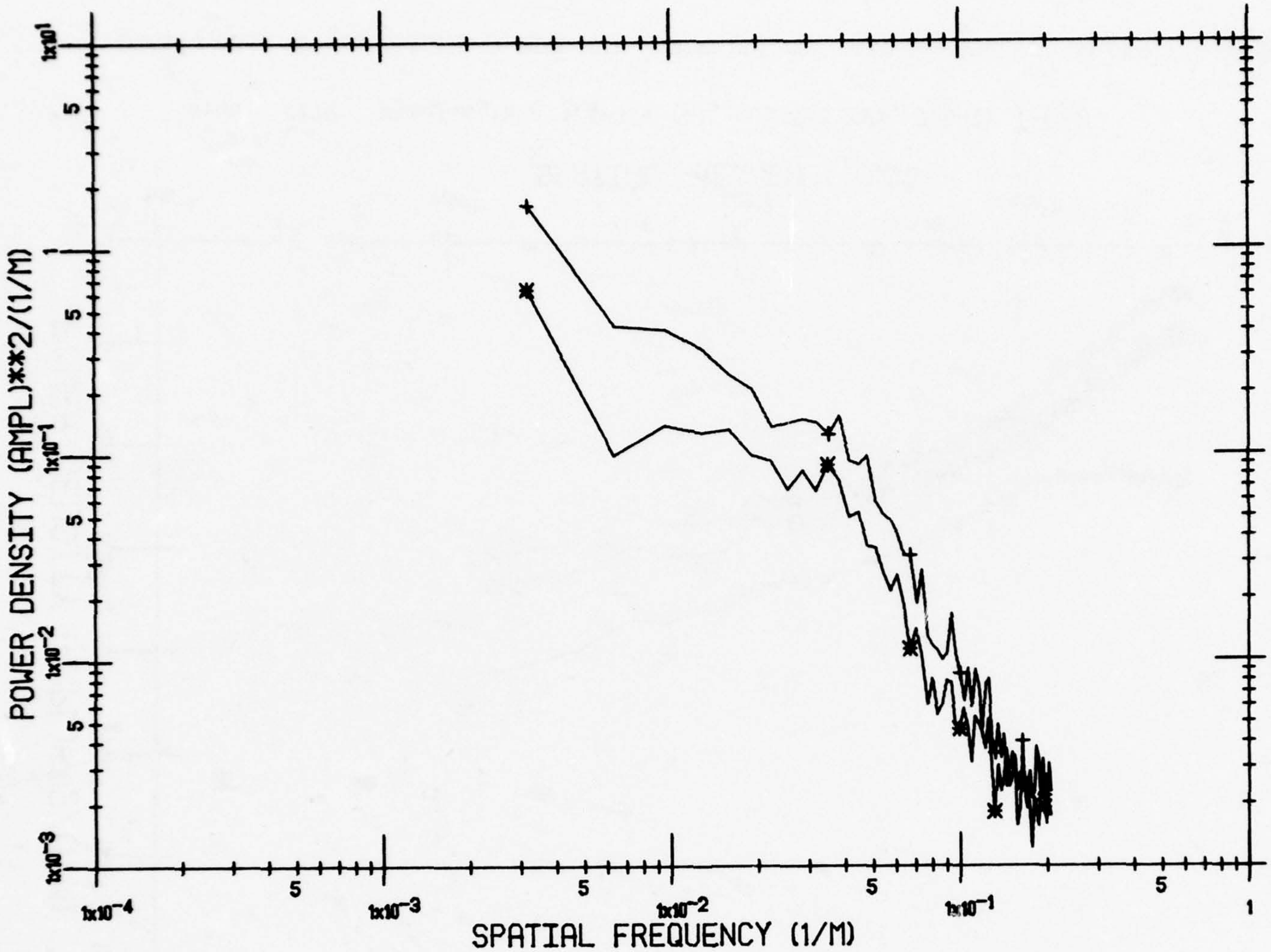
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 44b. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 90 DEG.) - INTRACK



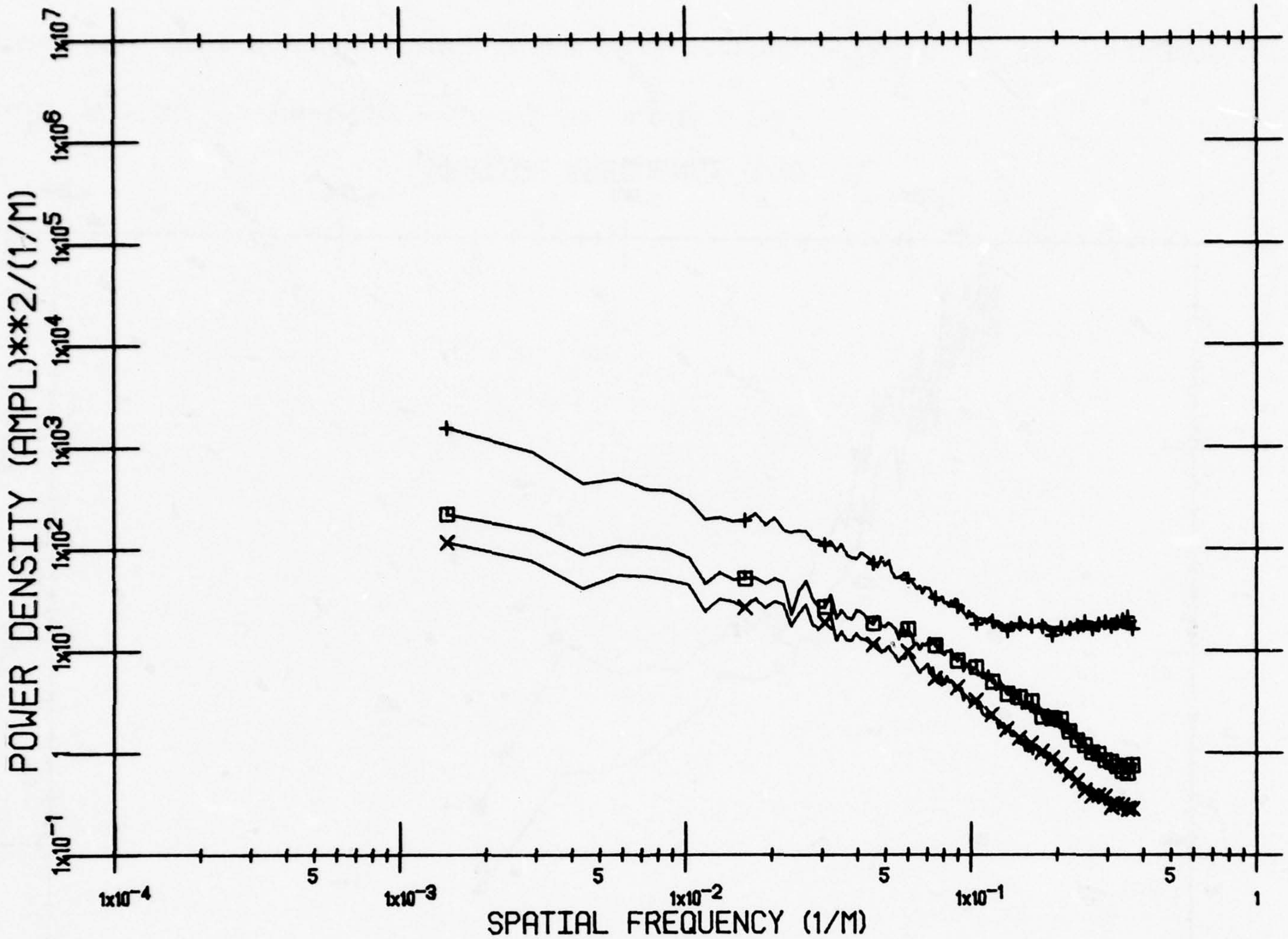
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 44c. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - CROSSTRACK



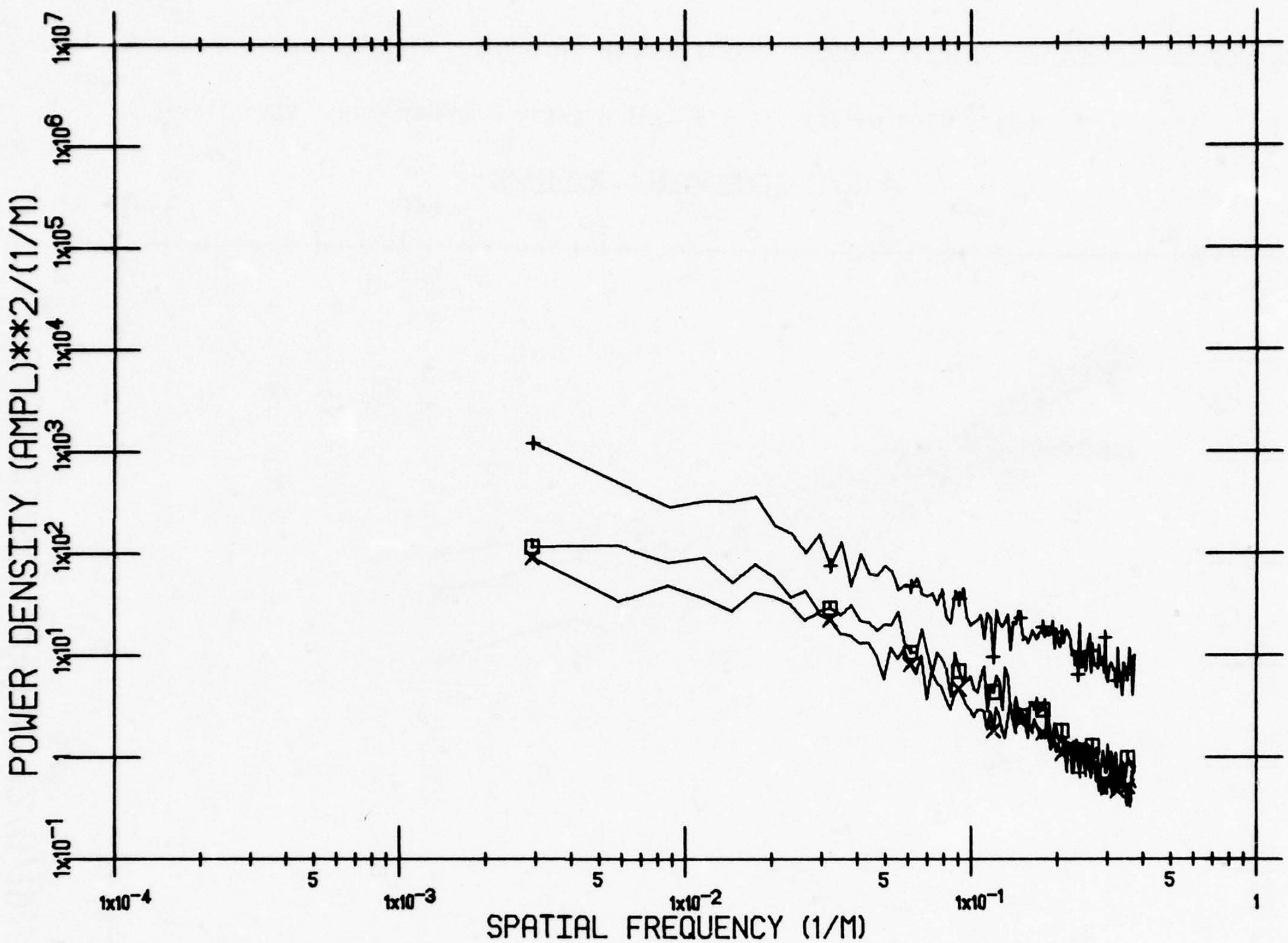
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 44d. POWER SPECTRA - MICHIGAN WINTER SCENE: PRE-DAWN - (ANGLE: 35 DEG.) - INTRACK



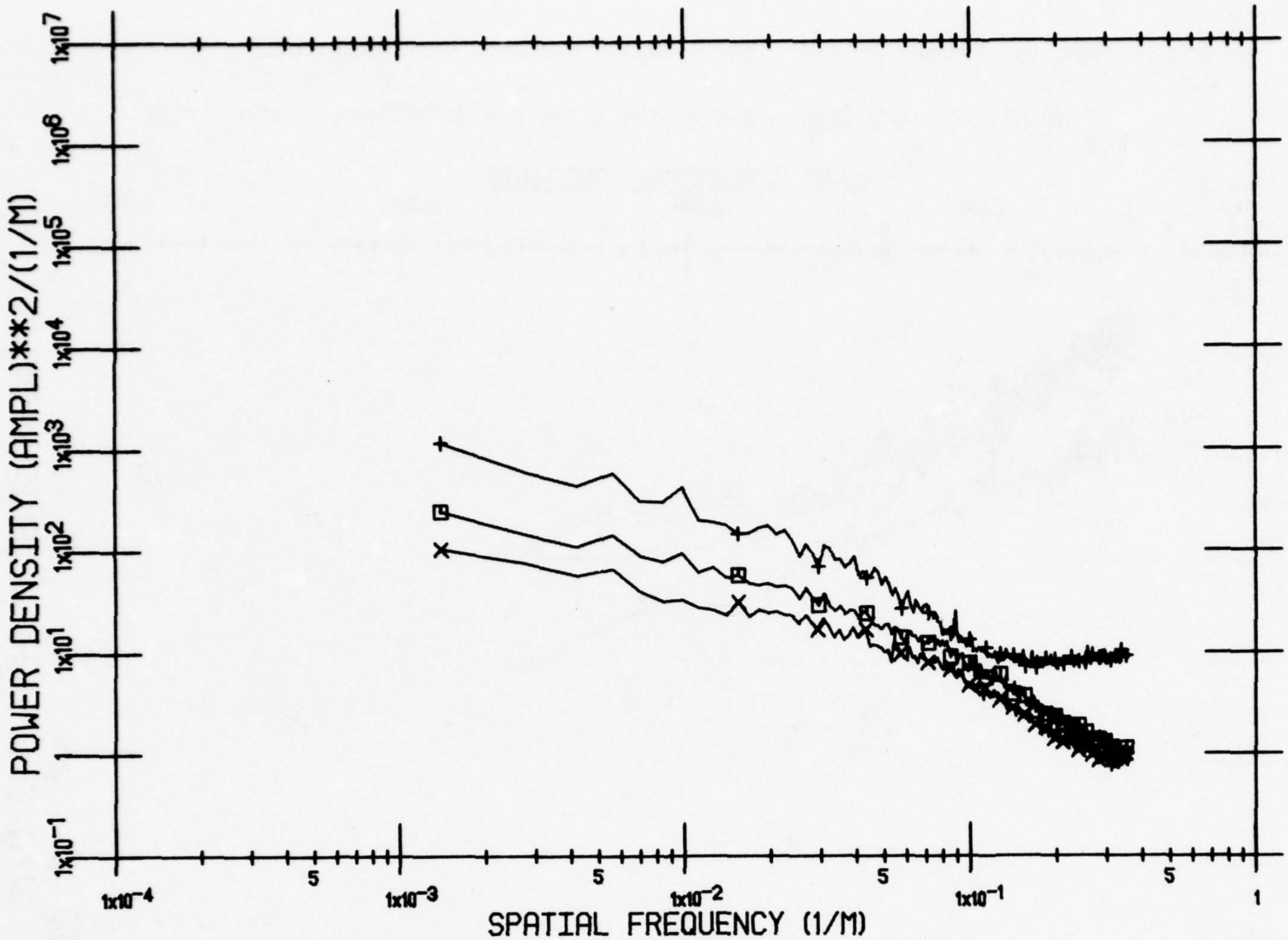
Area: CITY Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 45a. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - CROSSTRACK



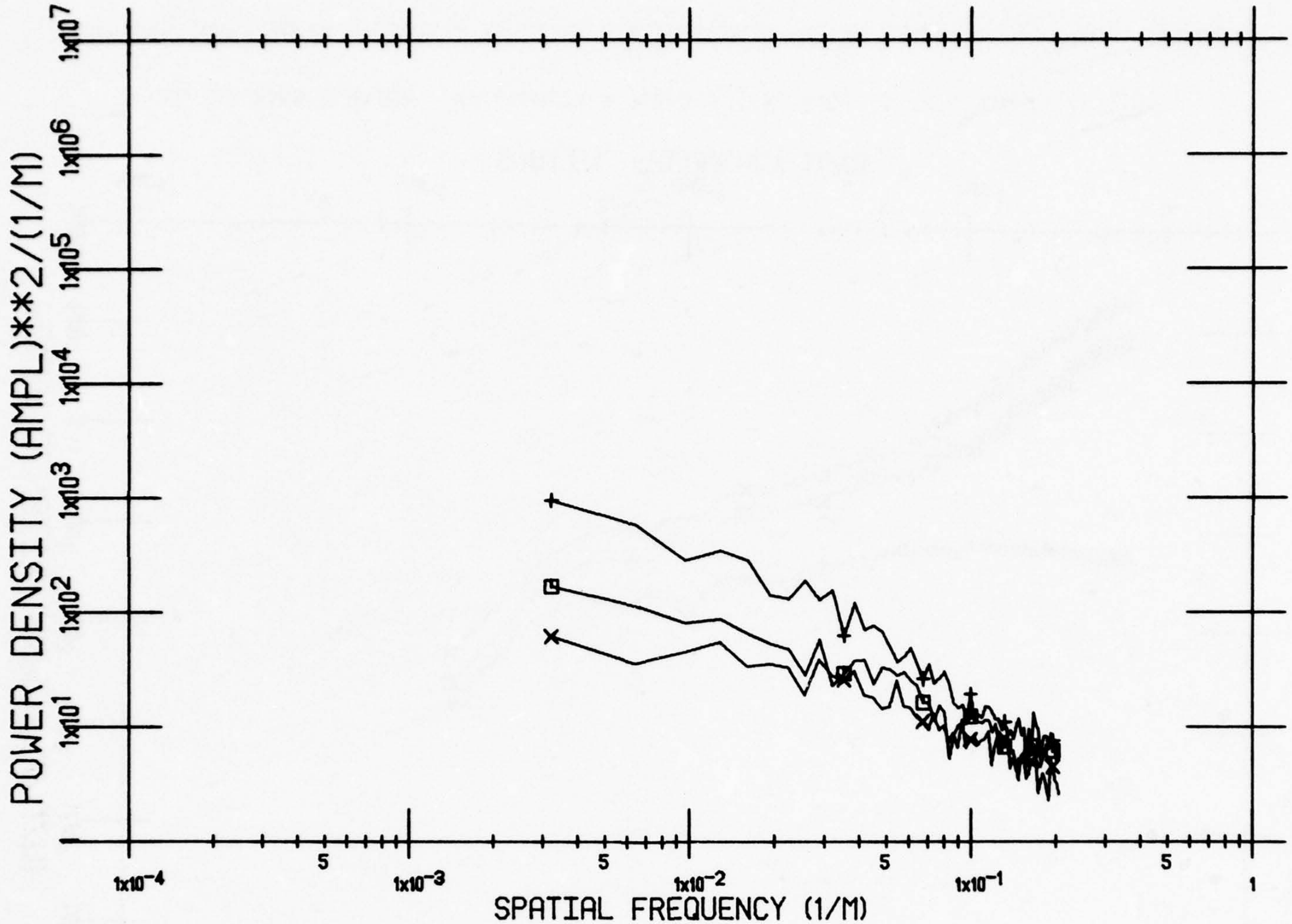
Area: CITY Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 45b. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - INTRACK



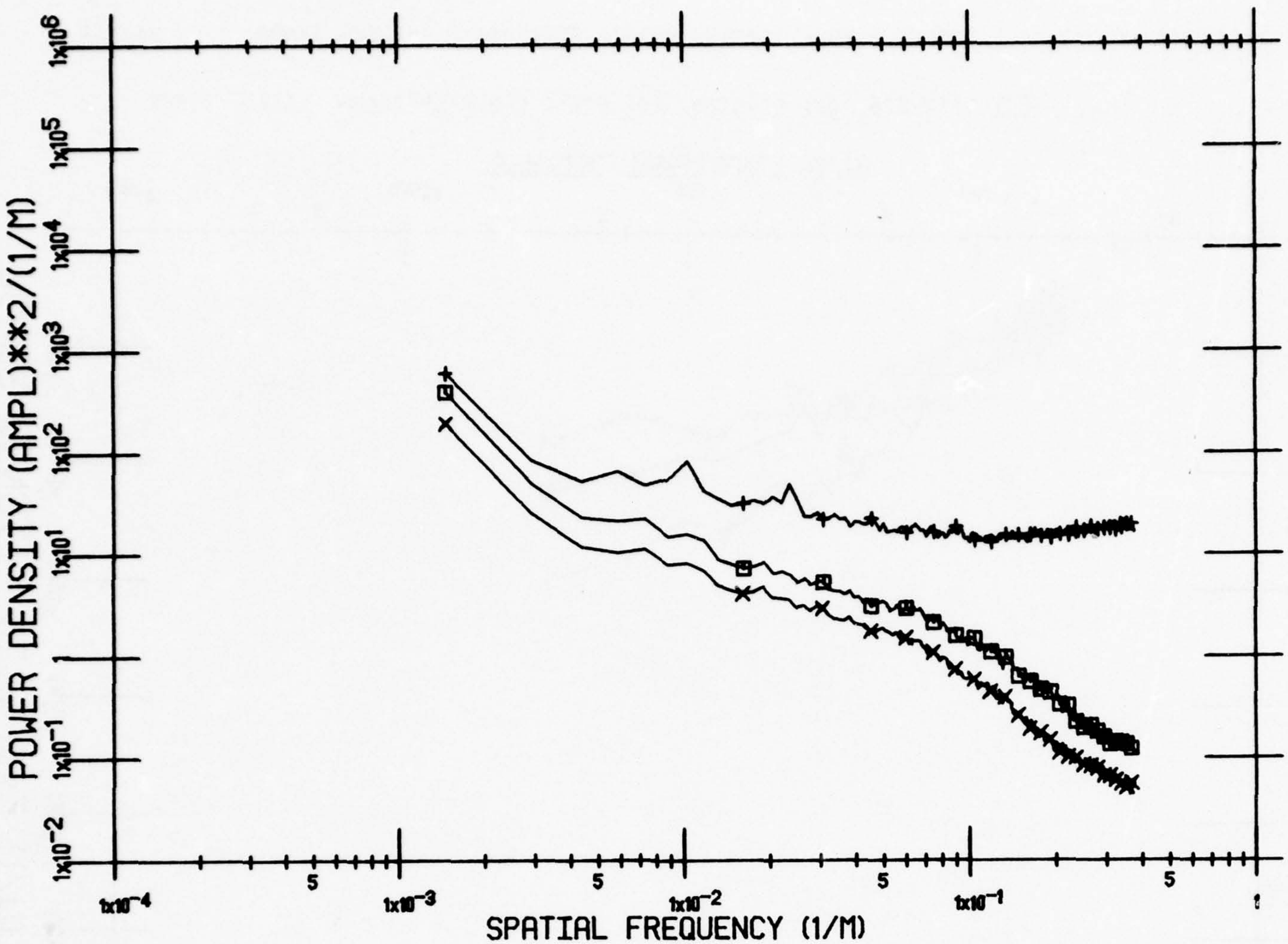
Area: CITY Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 45c. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - CROSSTRACK



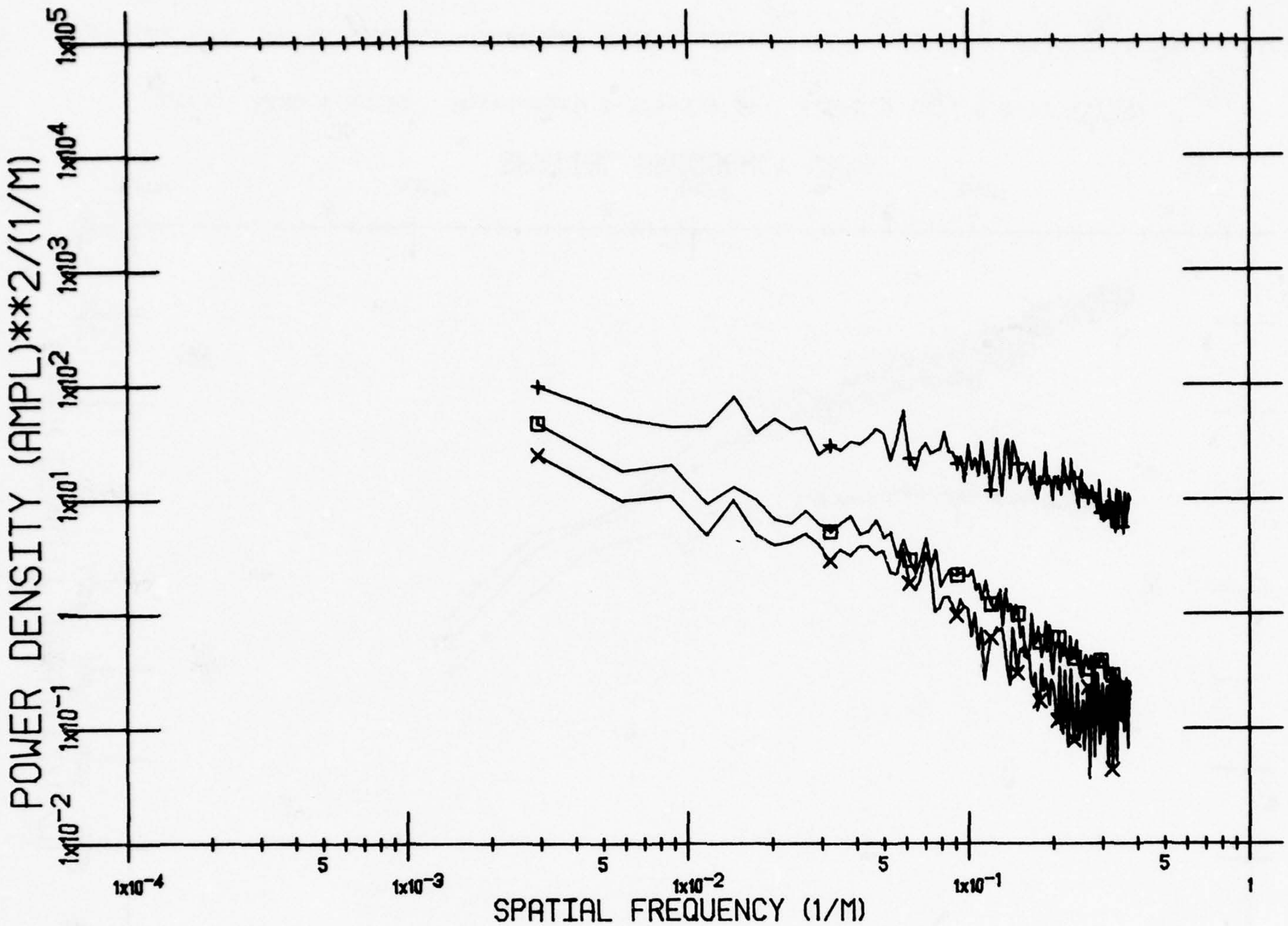
Area: CITY Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 45d. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - INTRACK



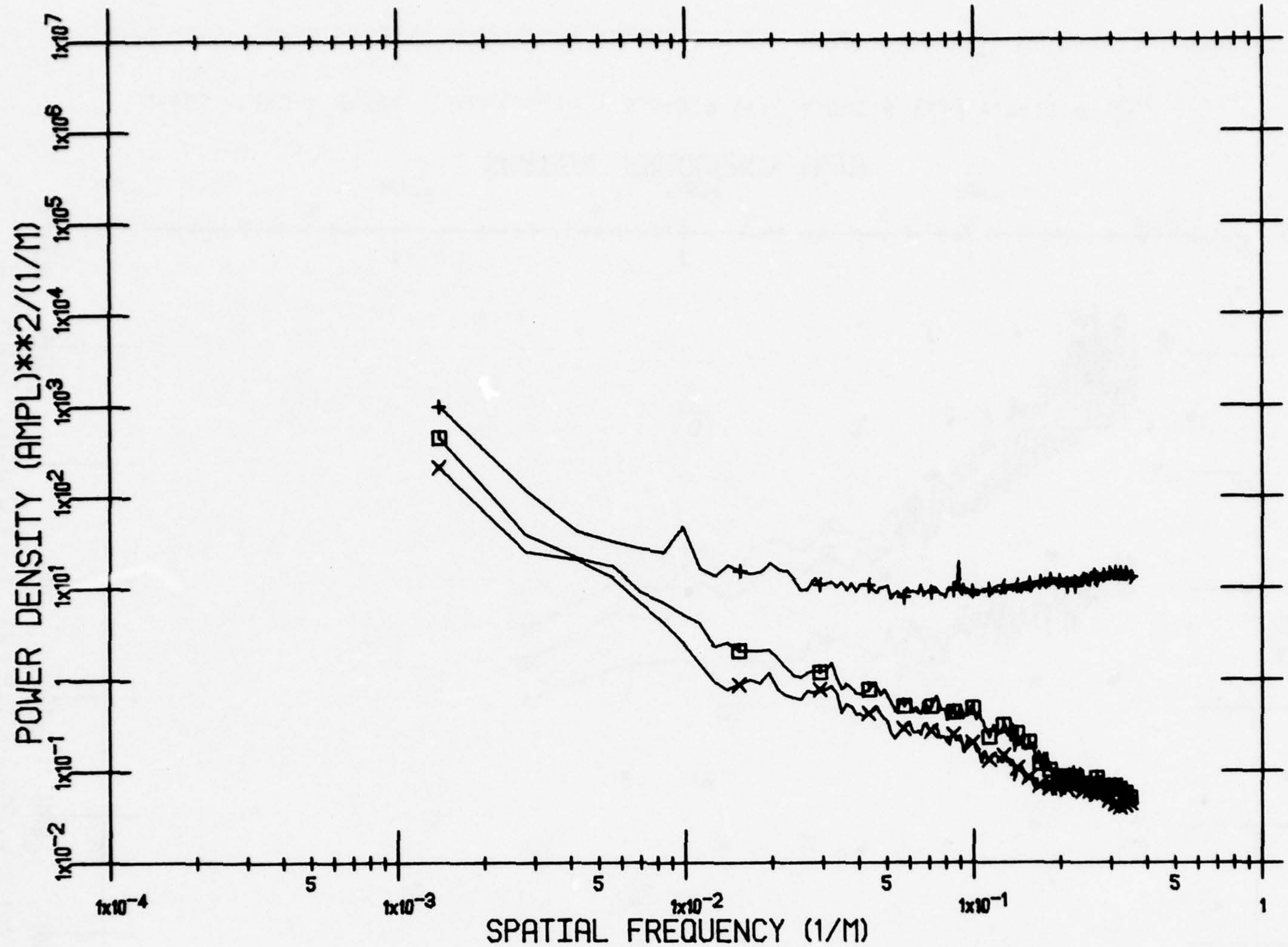
Area: LAND & WATER Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 46a. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - CROSSTRACK



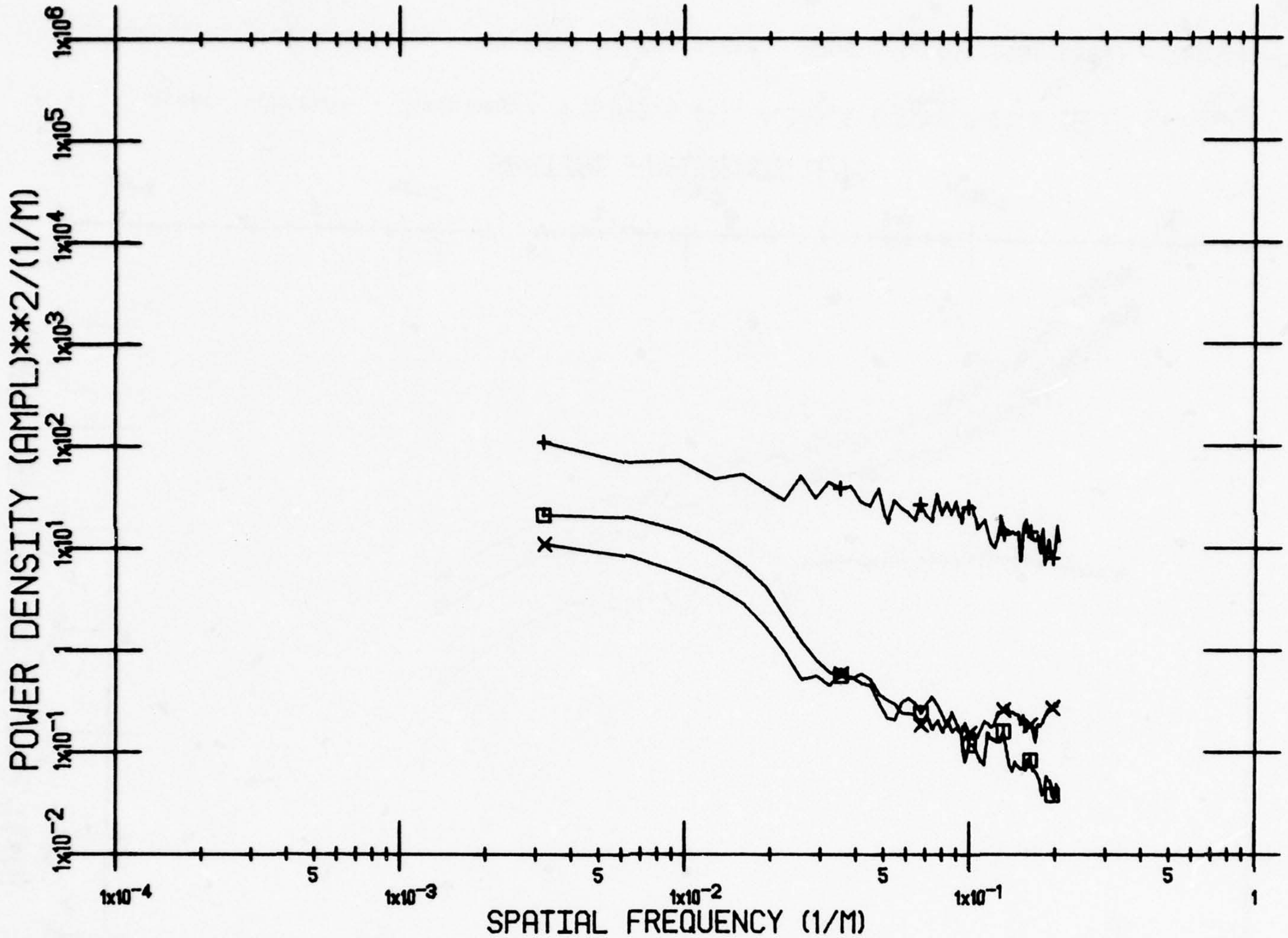
Area: LAND & WATER   Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 46b. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - INTRACK



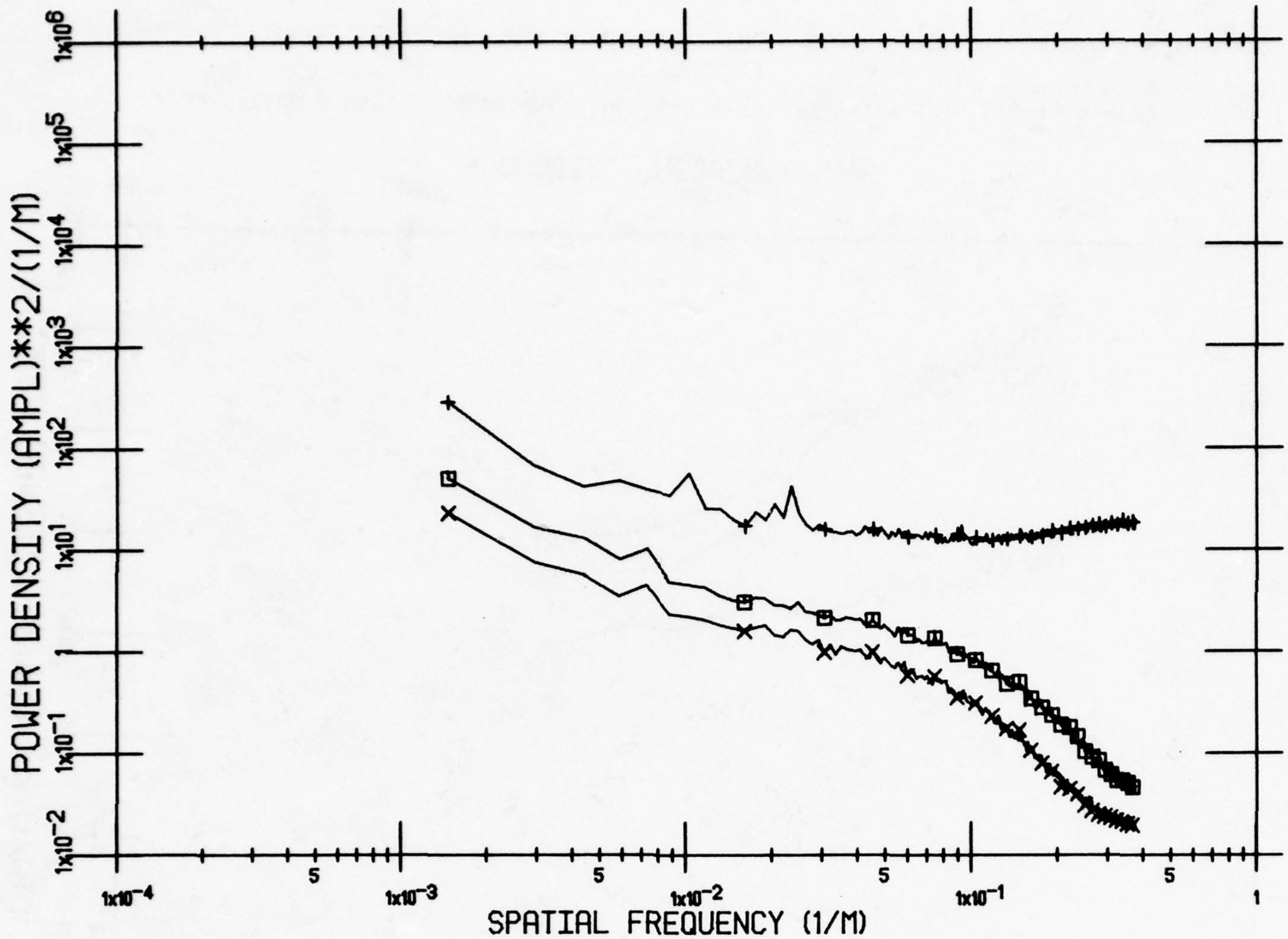
Area: LAND & WATER Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 46c. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - CROSSTRACK



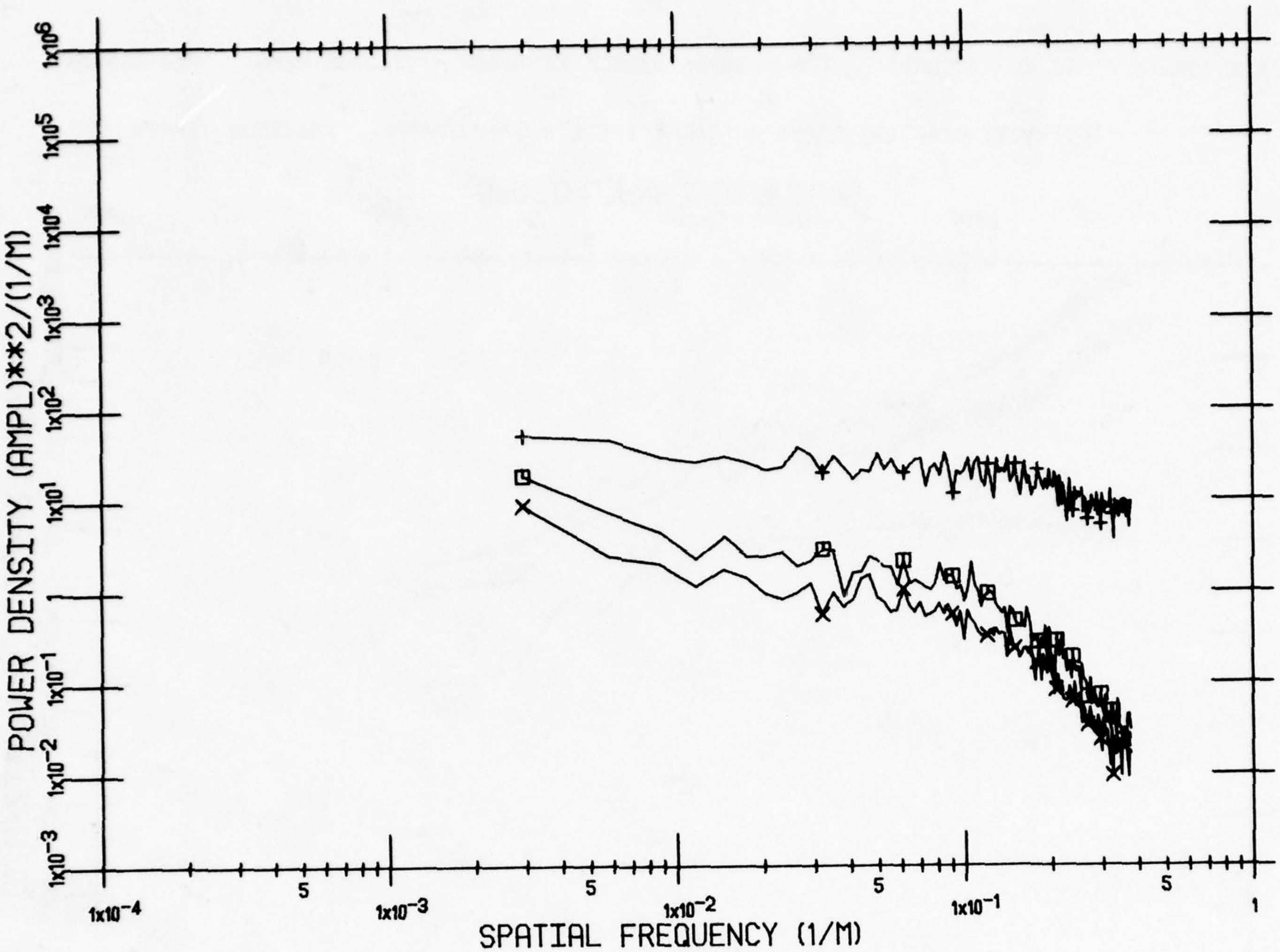
Area: LAND & WATER Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 46d. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - INTRACK



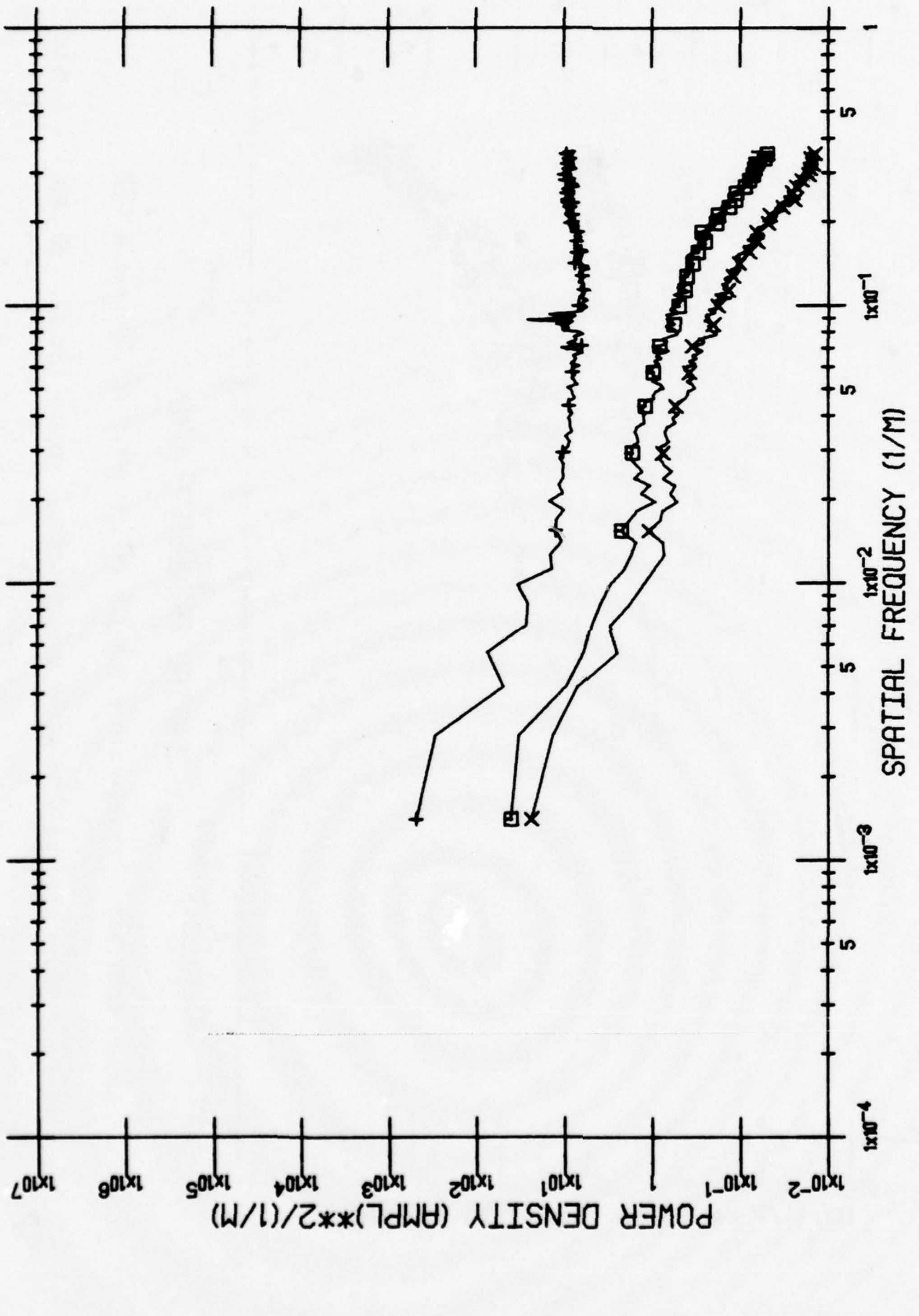
Area: CONIFERS   Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 47a. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - CROSSTRACK



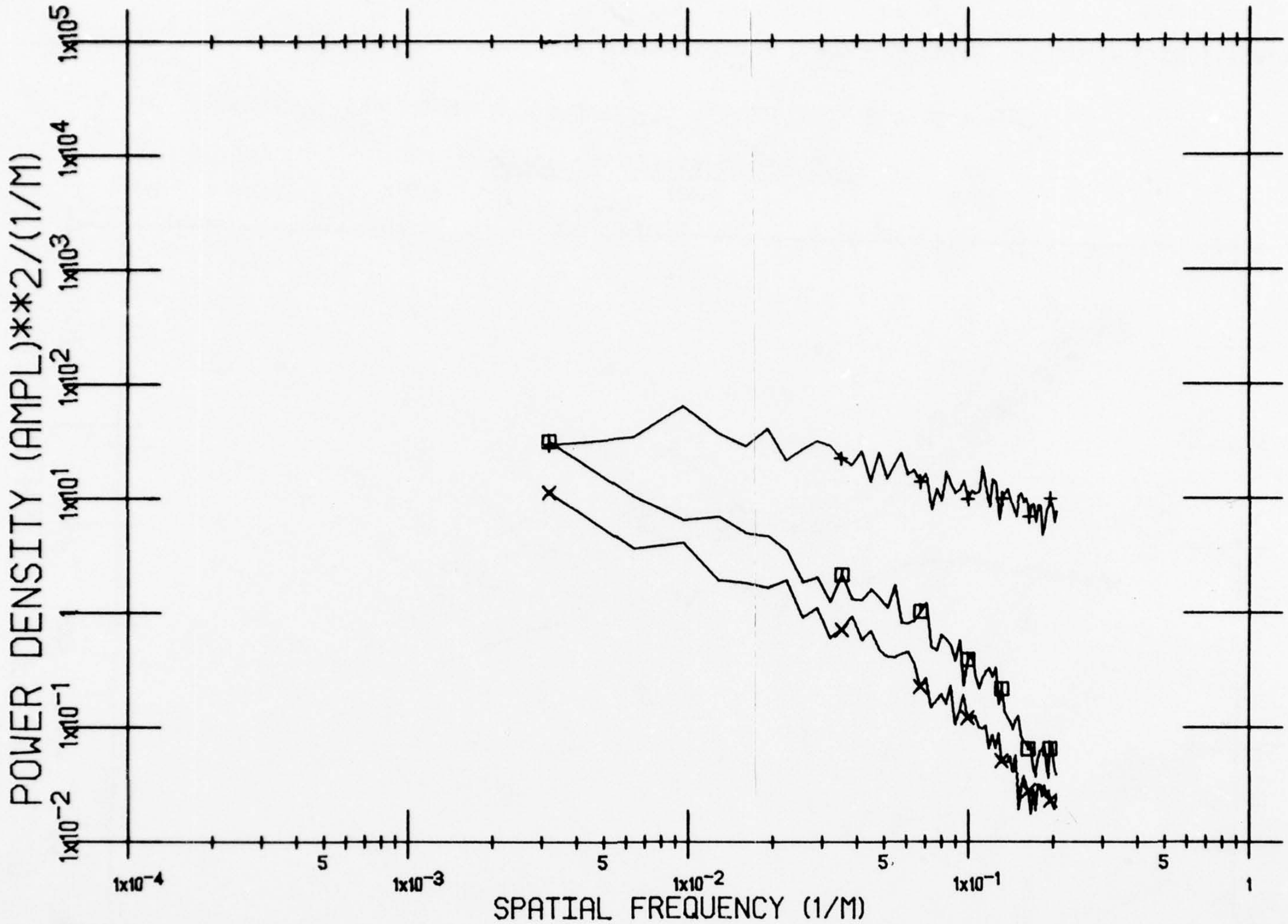
Area: CONIFERS Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 47b. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - INTRACK



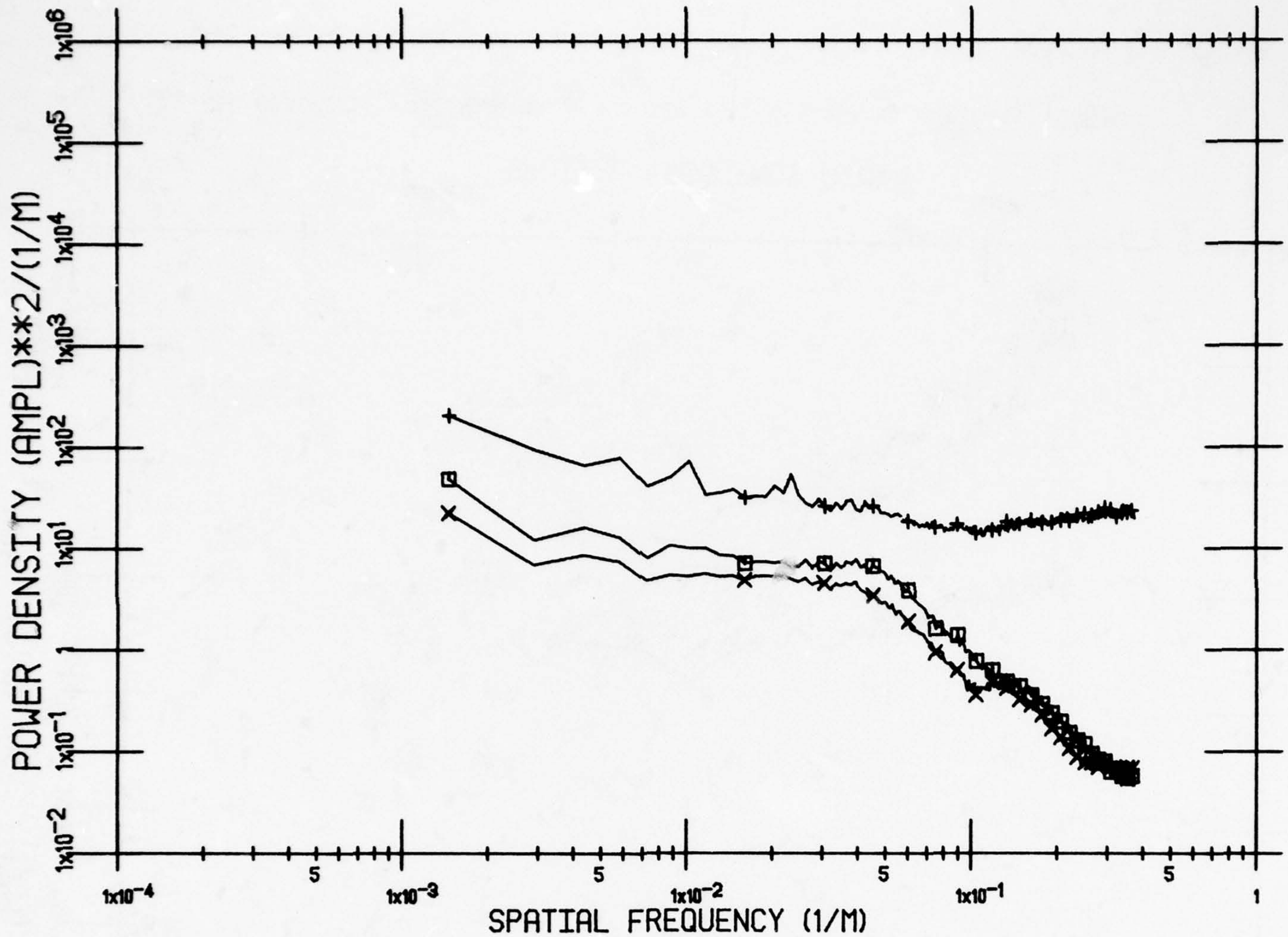
Area: CONIFERS Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 47c. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - CROSSTRACK



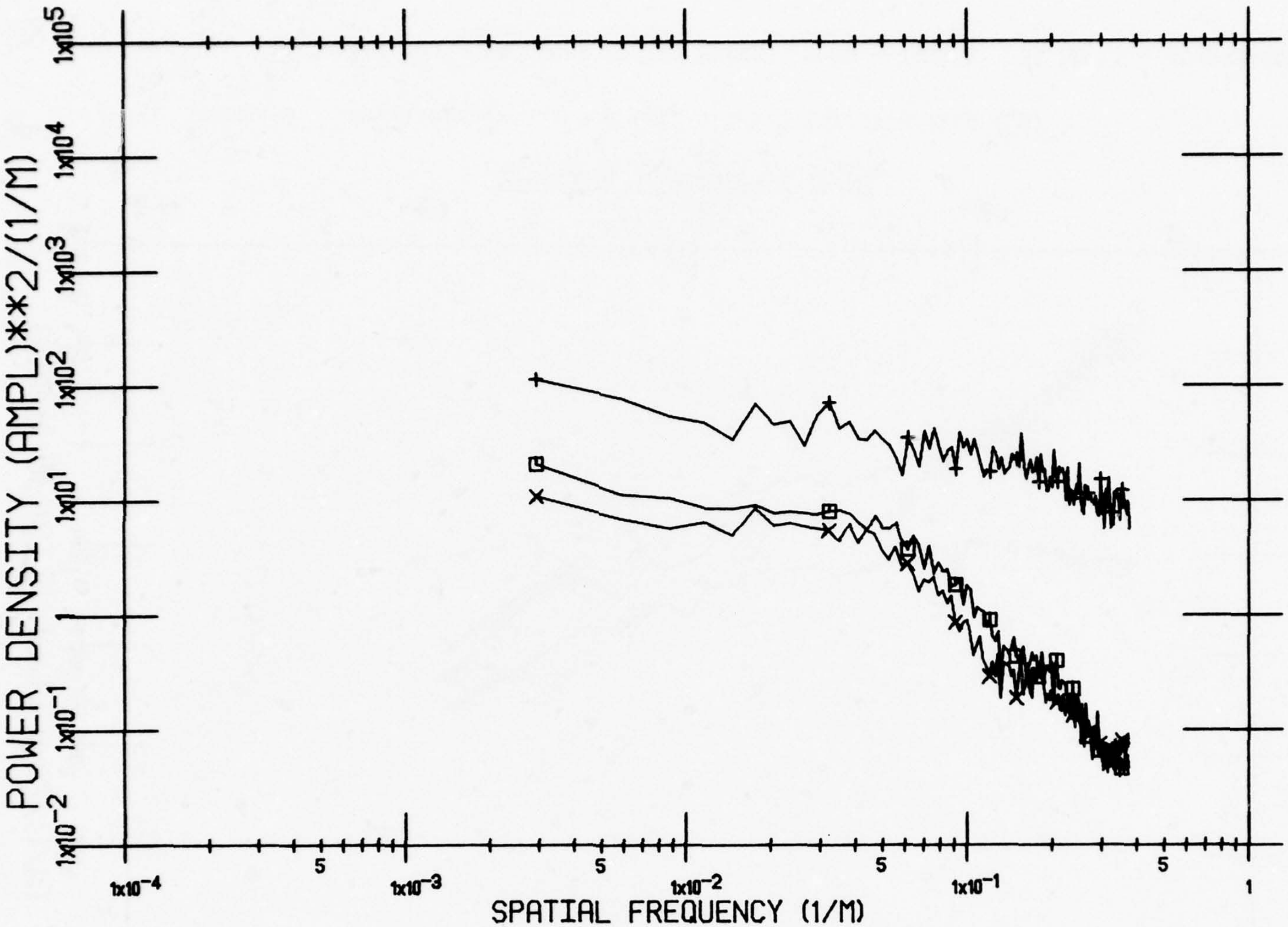
Area: CONIFERS Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 47d. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - INTRACK



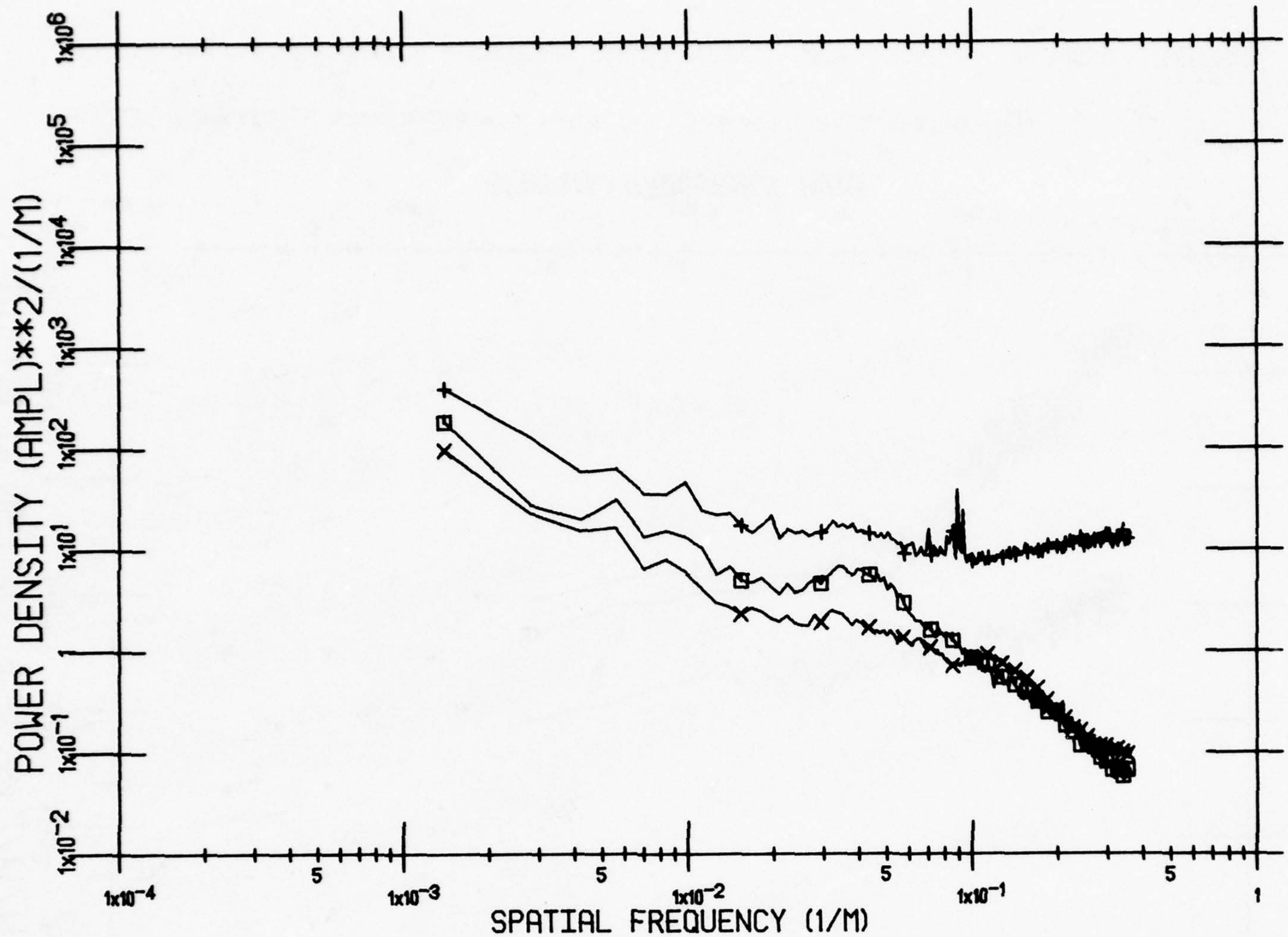
Area: FARMLAND Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 48a. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - CROSSTRACK



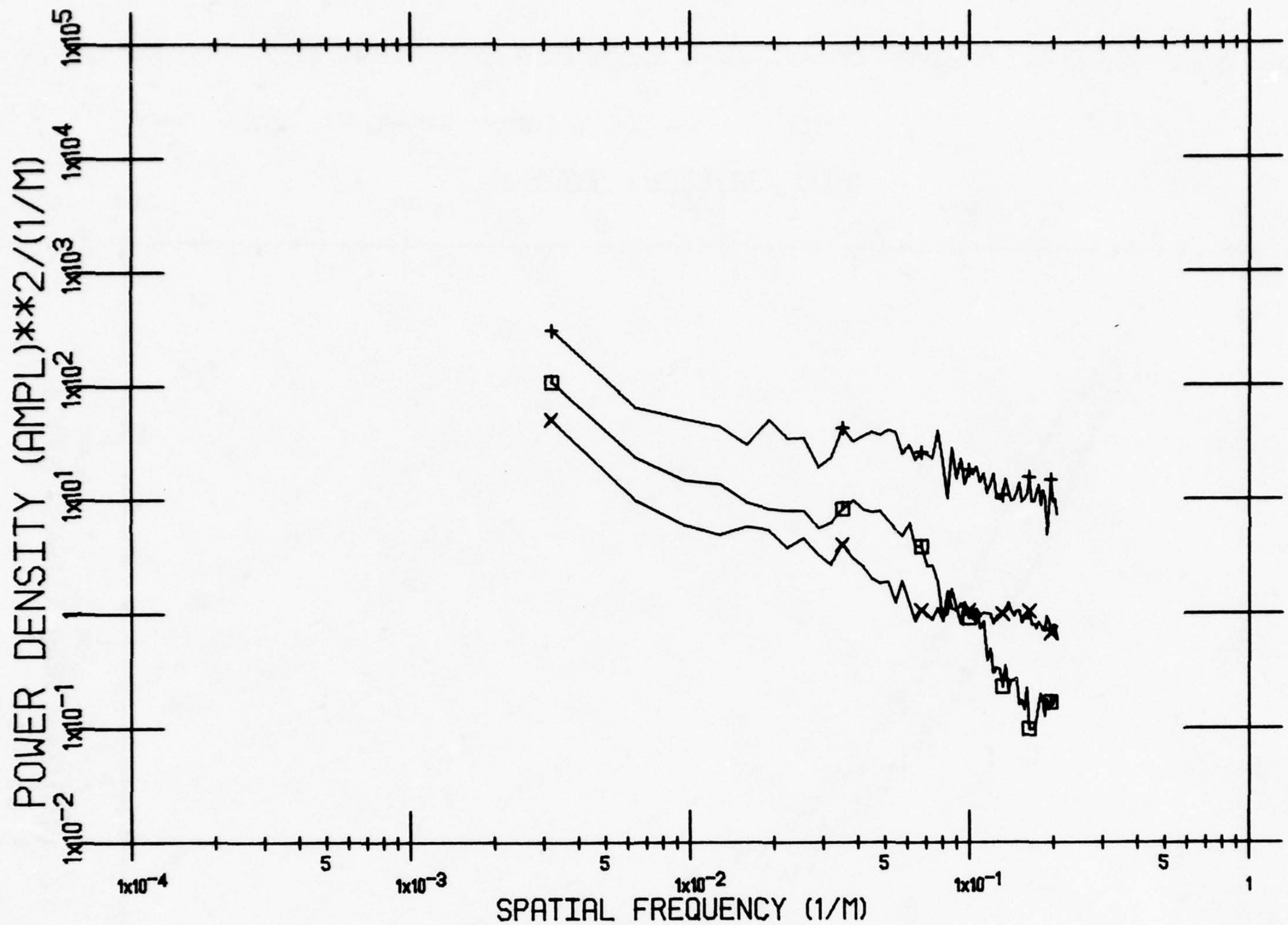
Area: FARMLAND Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 48b. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 90 DEG.) - INTRACK



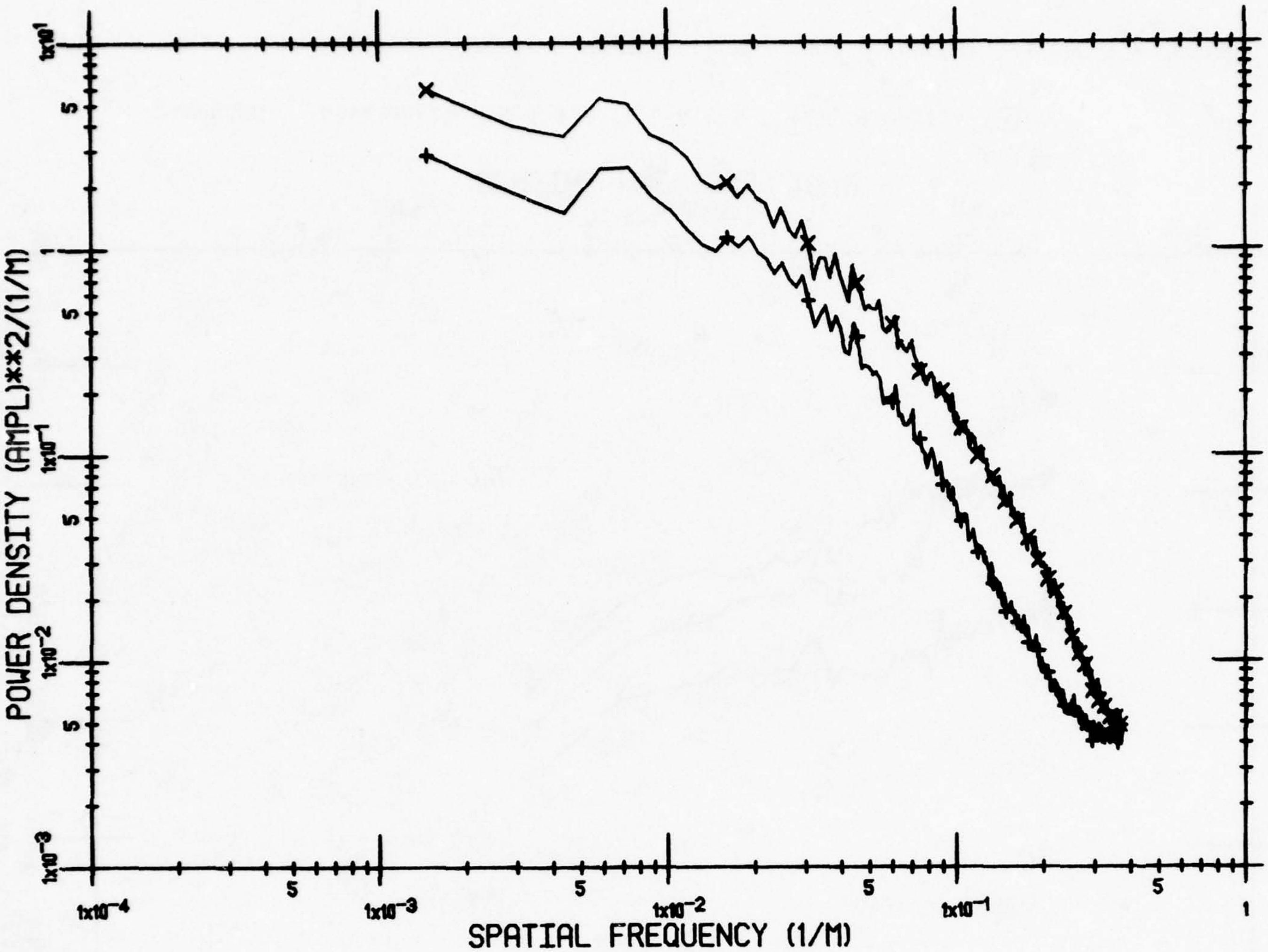
Area: FARMLAND Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 48c. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - CROSSTRACK



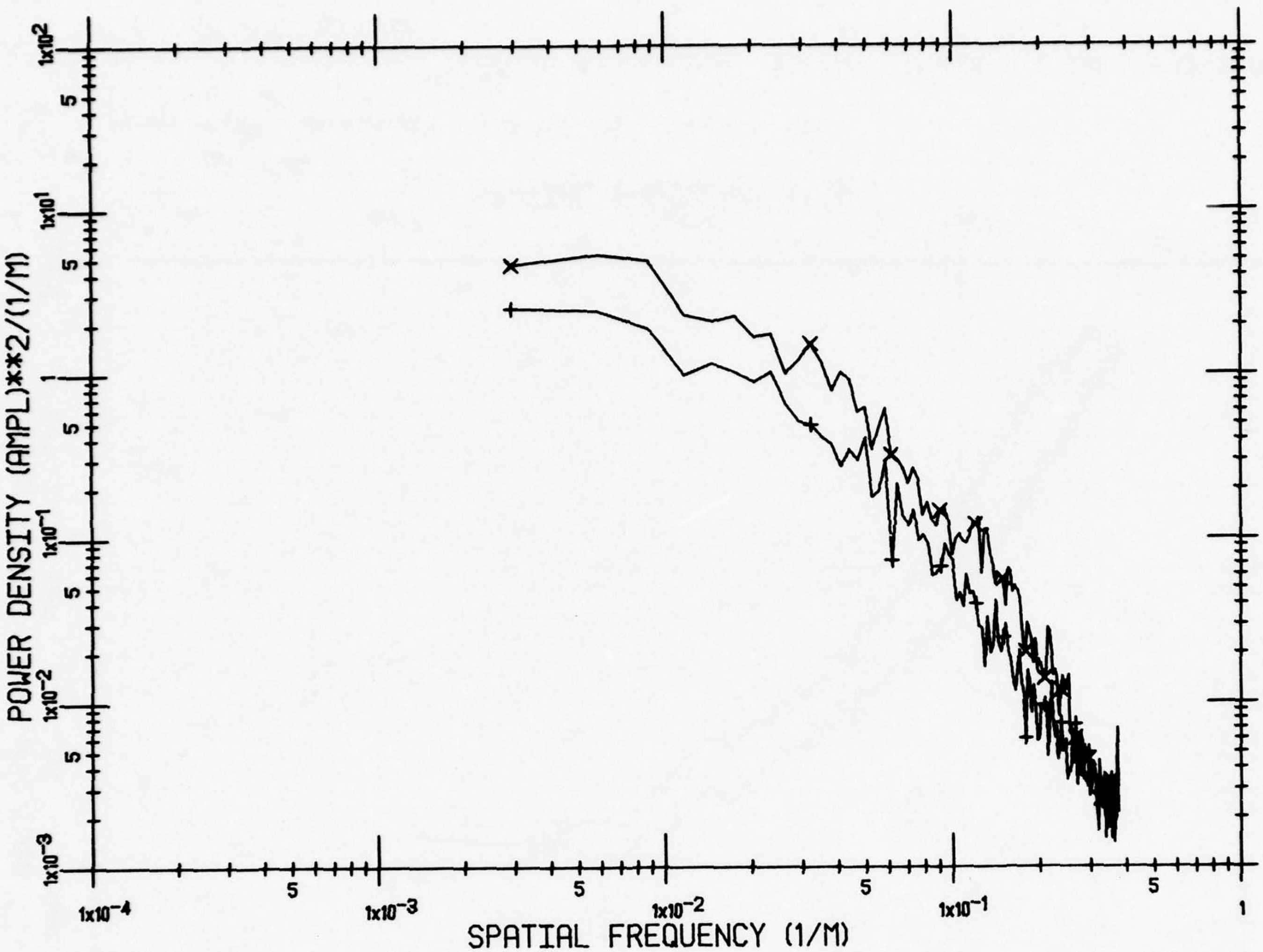
Area: FARMLAND Wavelength = 3.5-3.9 (+), 4.5-5.5 (X), 9.0-11.4 (⊡)

FIGURE 48d. POWER SPECTRA - MICHIGAN WINTER SCENE: NOON - (ANGLE: 35 DEG.) - INTRACK



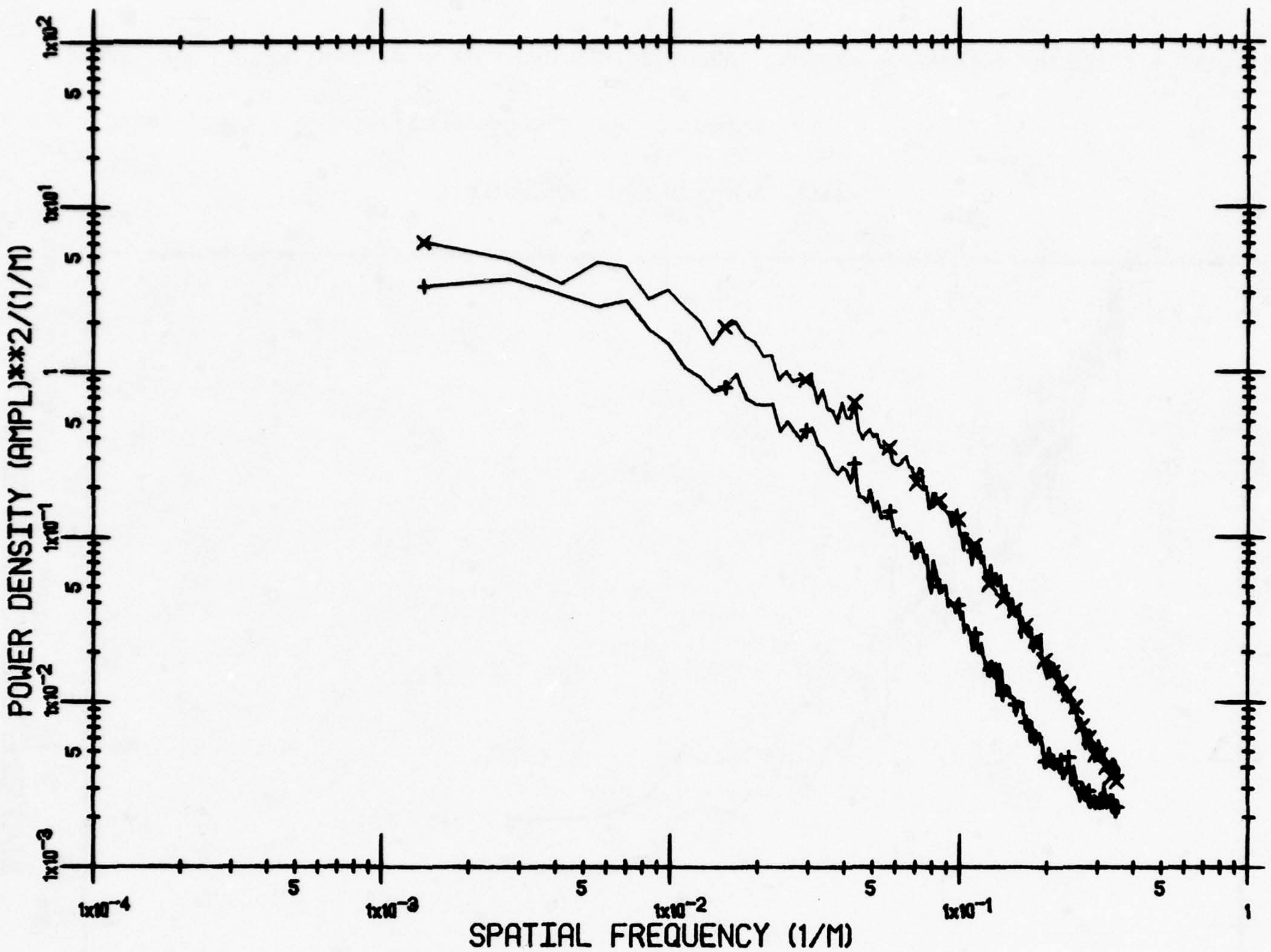
Area: CITY Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 49a. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - CROSSTRACK



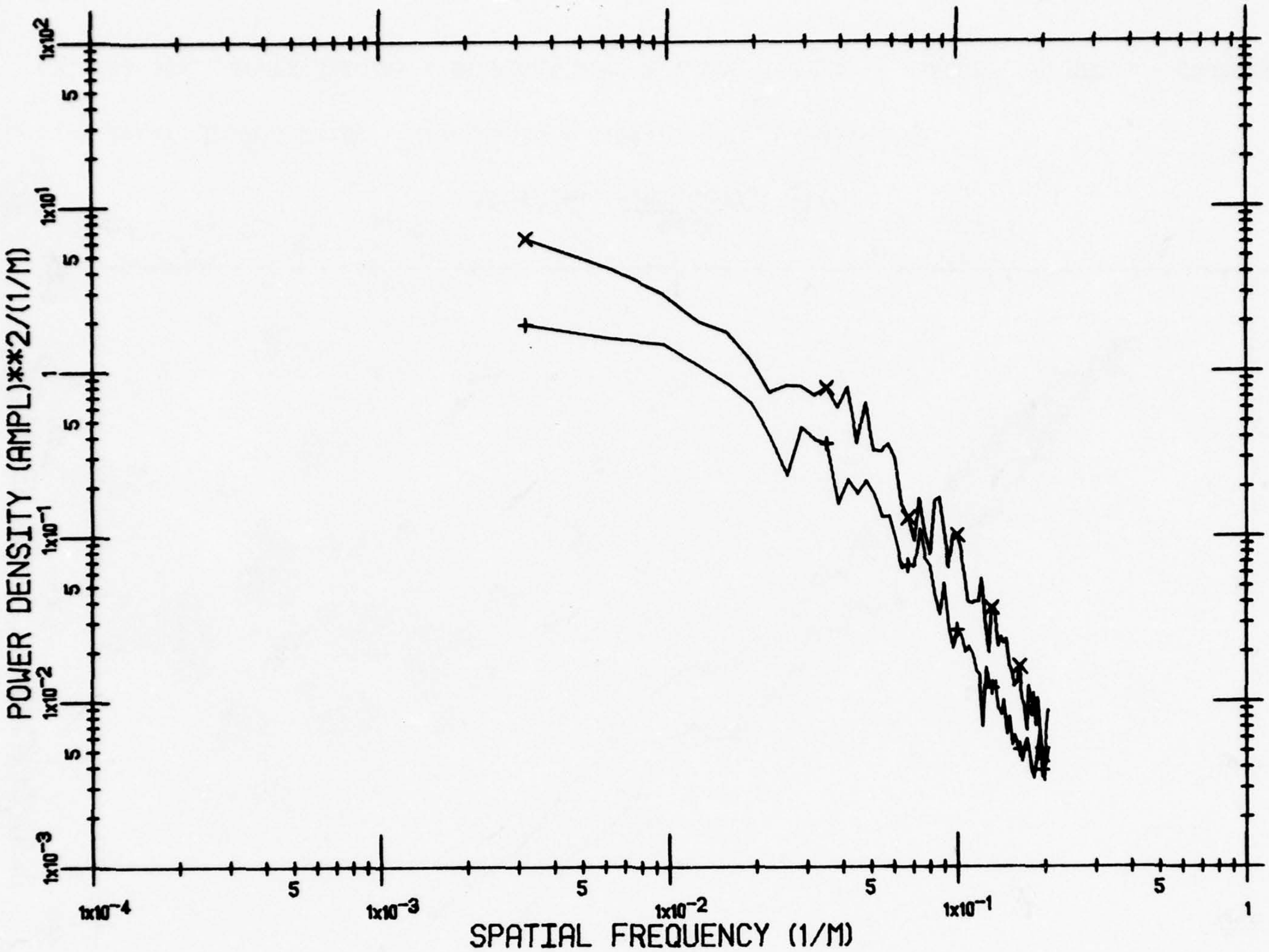
Area: CITY Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 49b. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - INTRACK



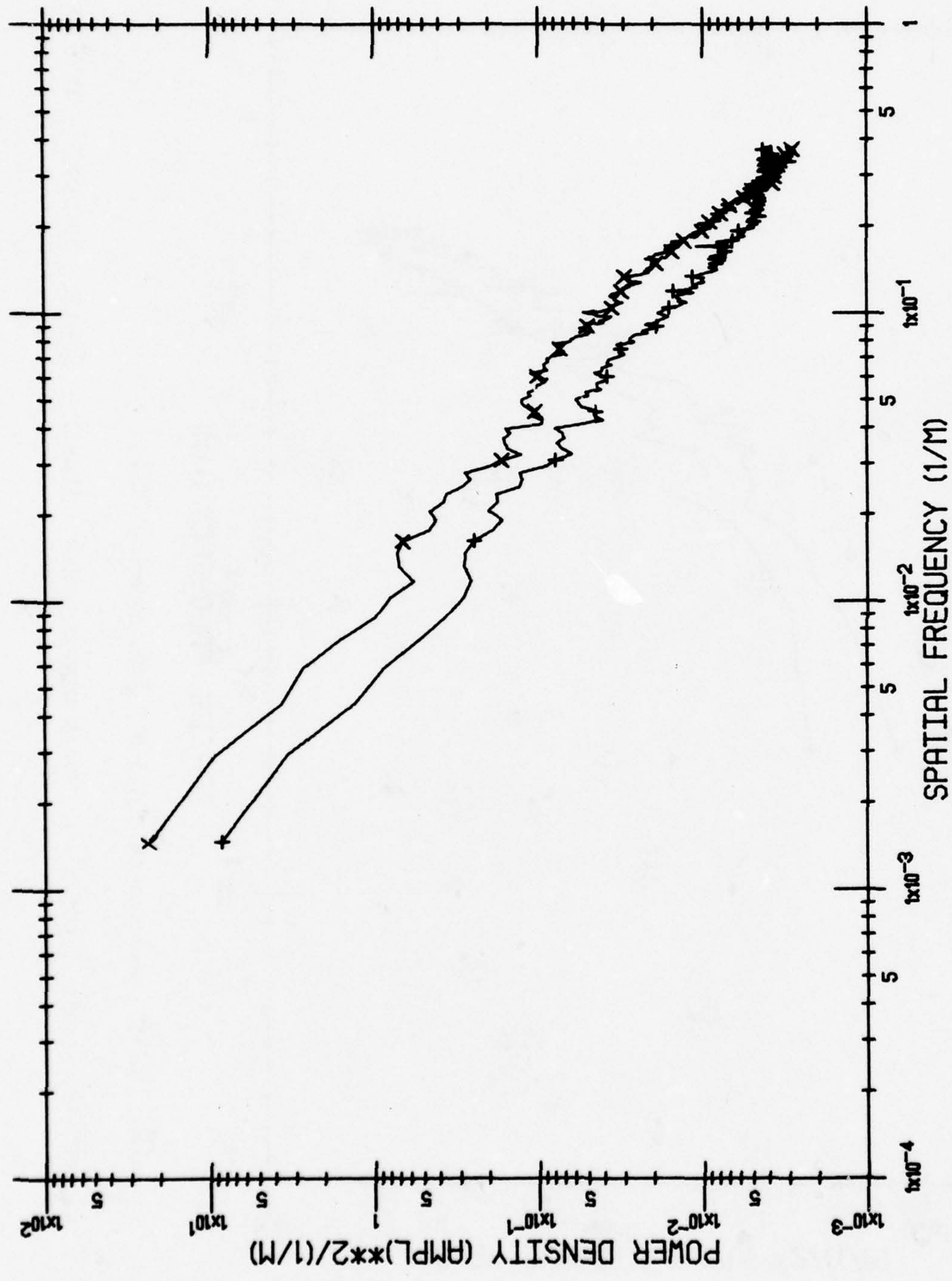
Area: CITY Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 49c. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - CROSSTRACK



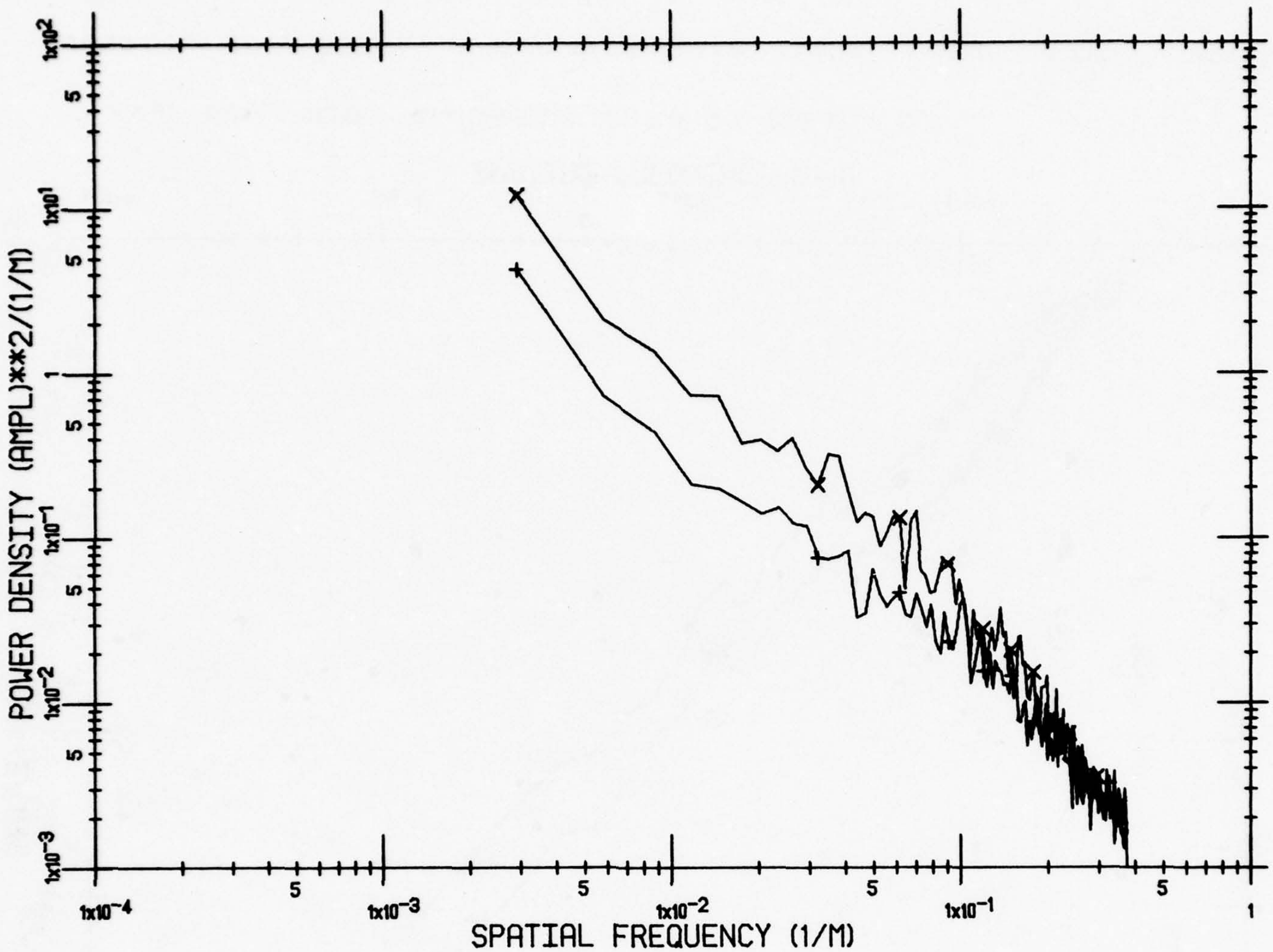
Area: CITY Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 49d. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - INTRACK



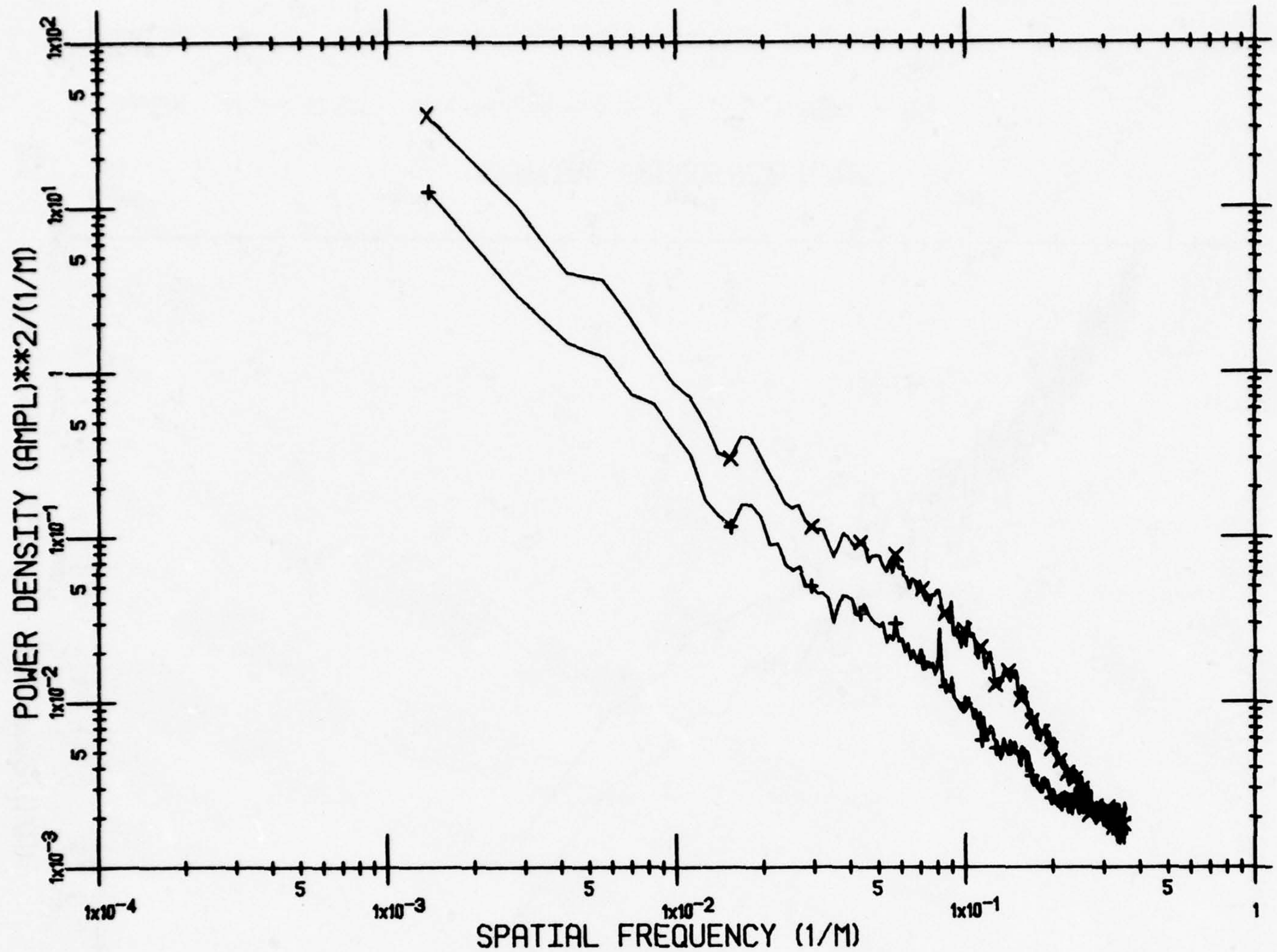
Area: LAND & WATER Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 50a. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - CROSSTRACK



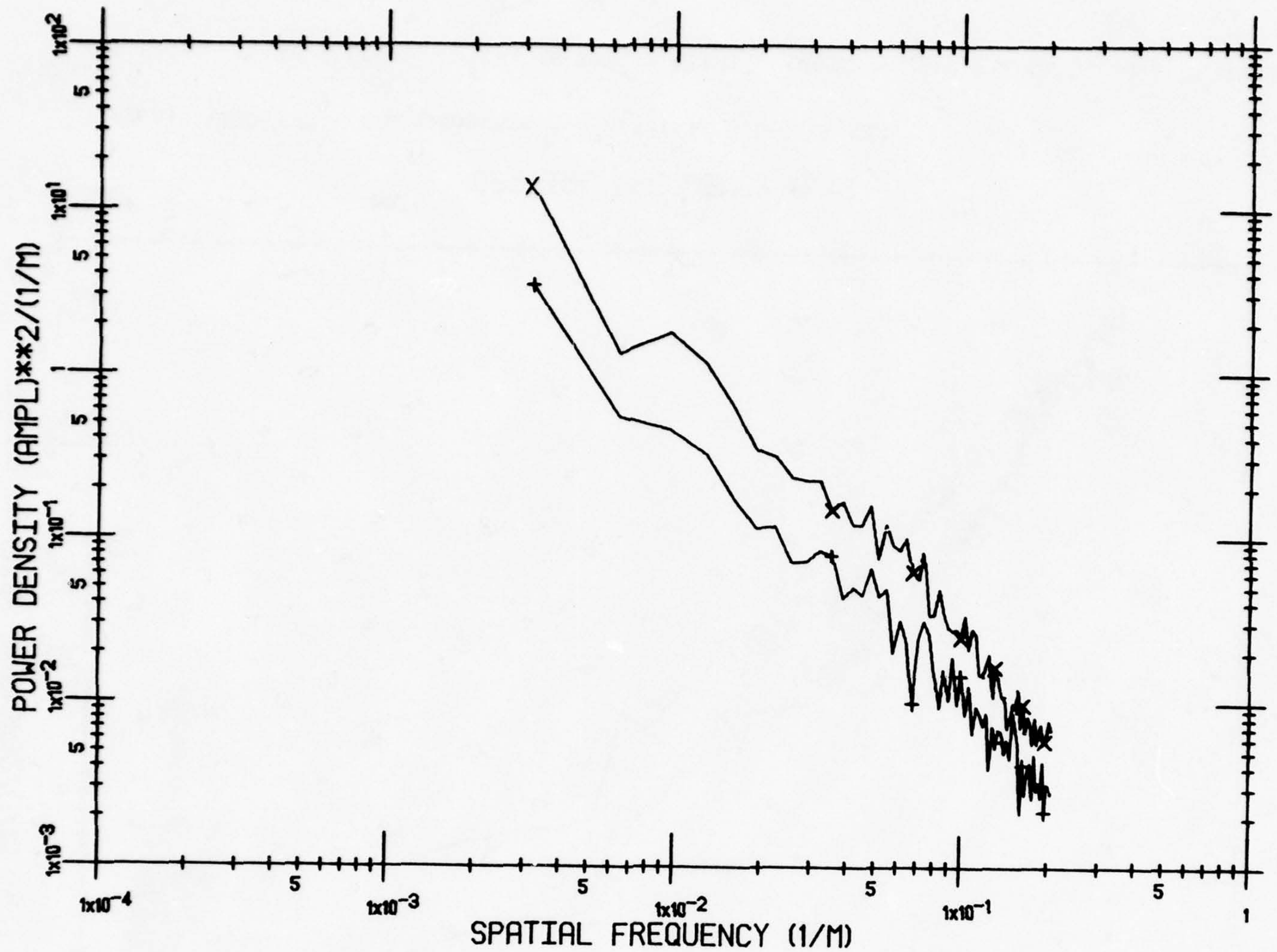
Area: LAND & WATER Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 50b. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - INTRACK



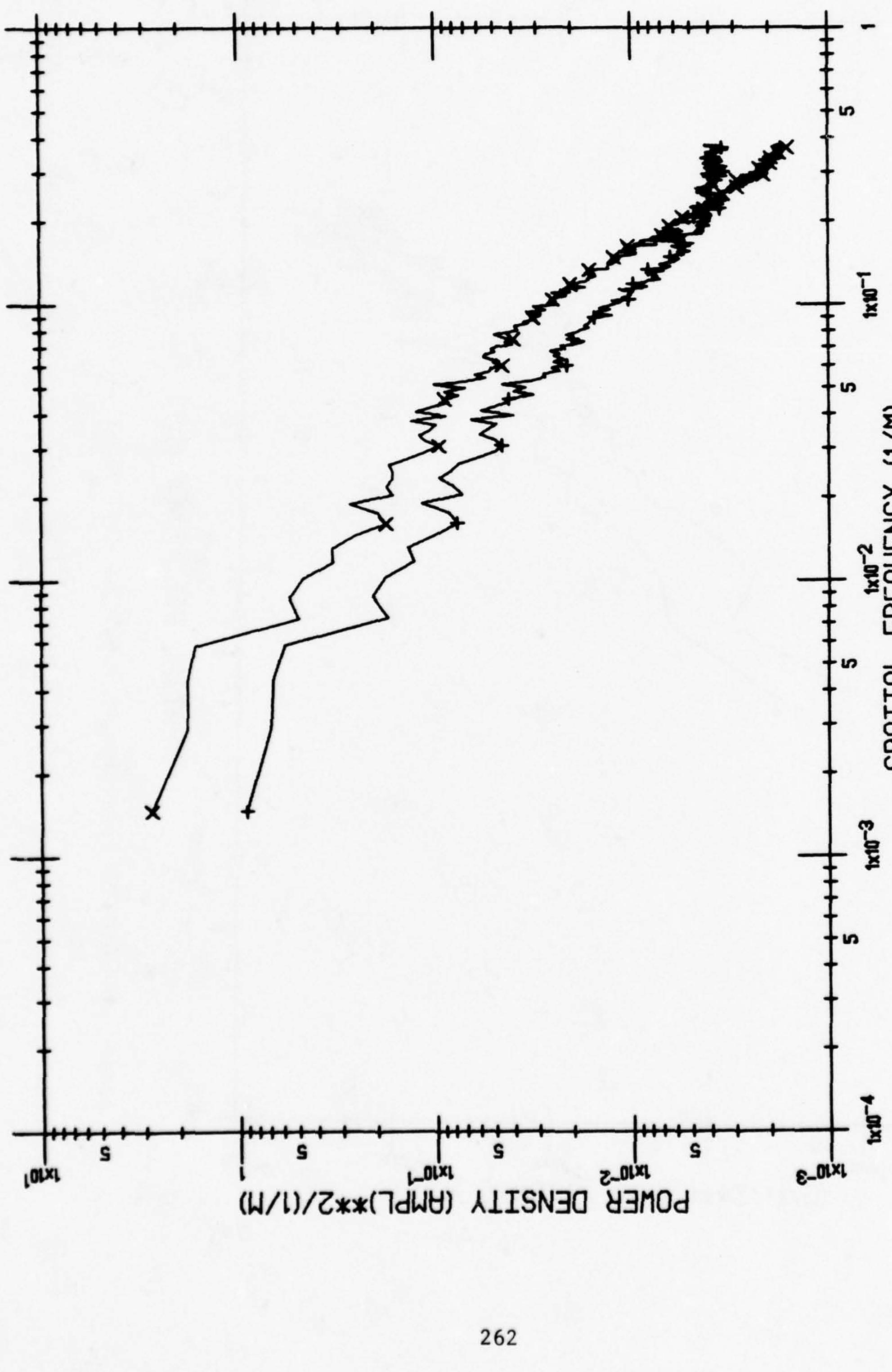
Area: LAND & WATER Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 50c. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - CROSSTRACK



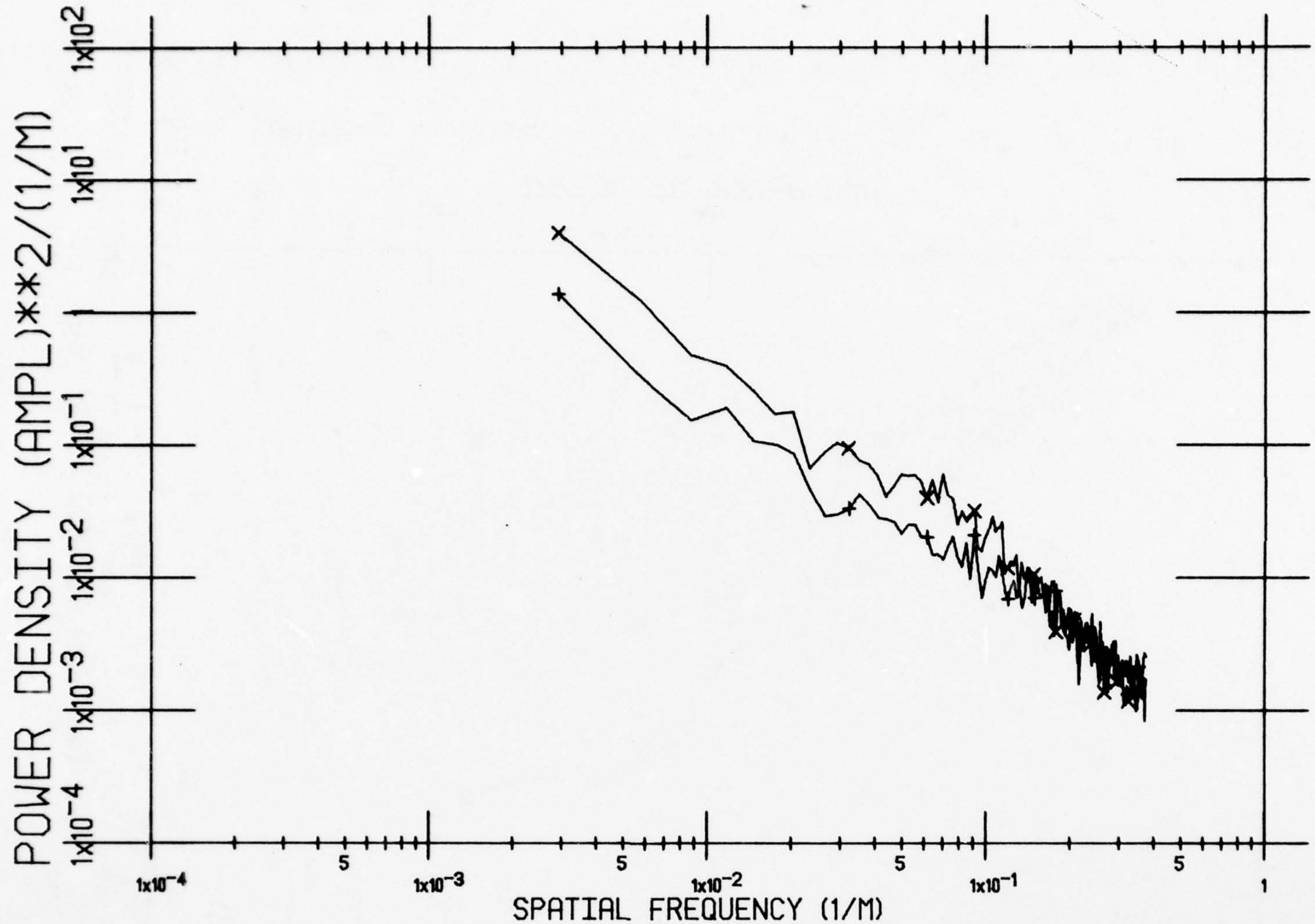
Area: LAND & WATER Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 50d. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - INTRACK



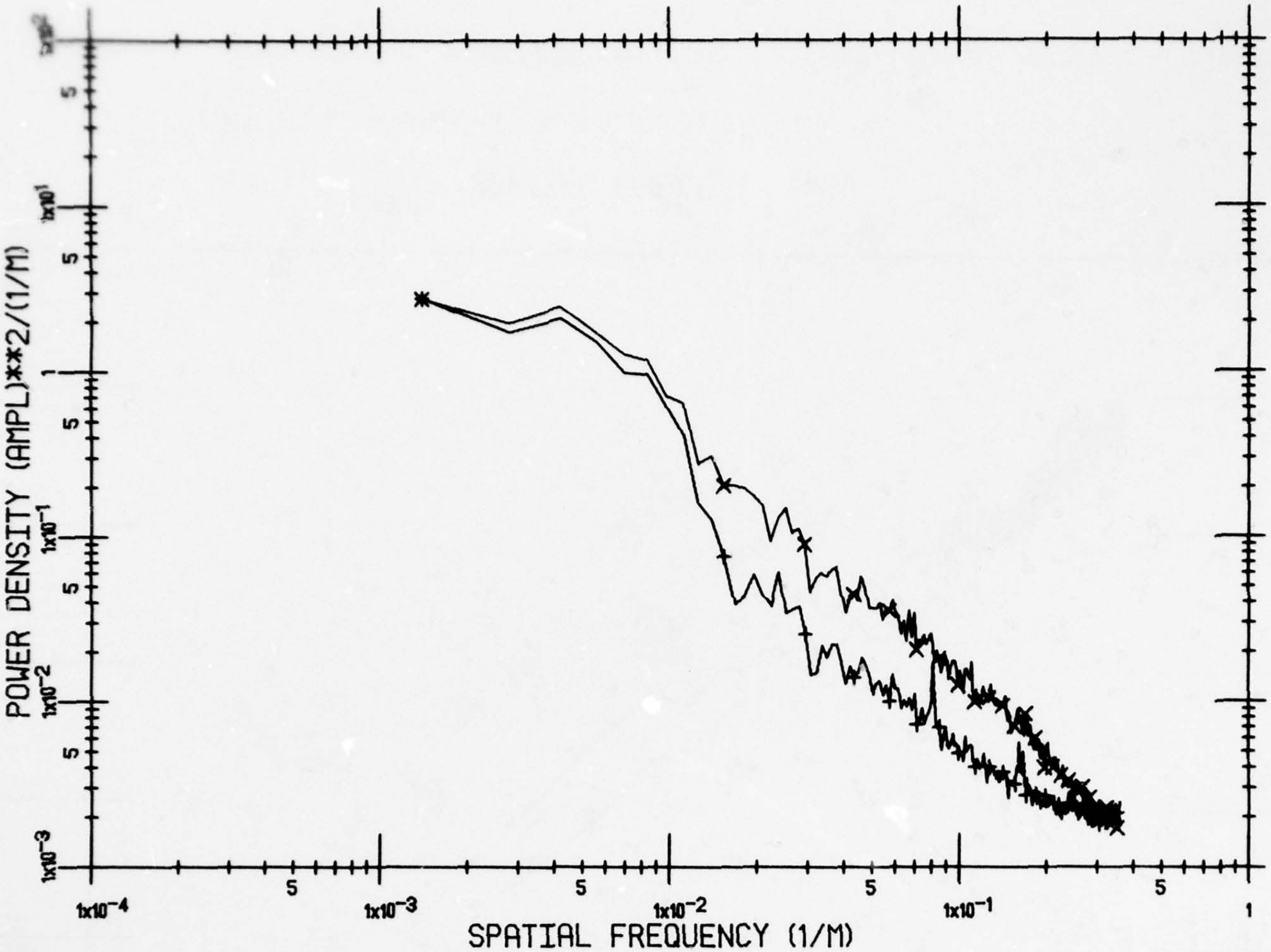
Area: CONIFERS Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 51a. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - CROSSTRACK



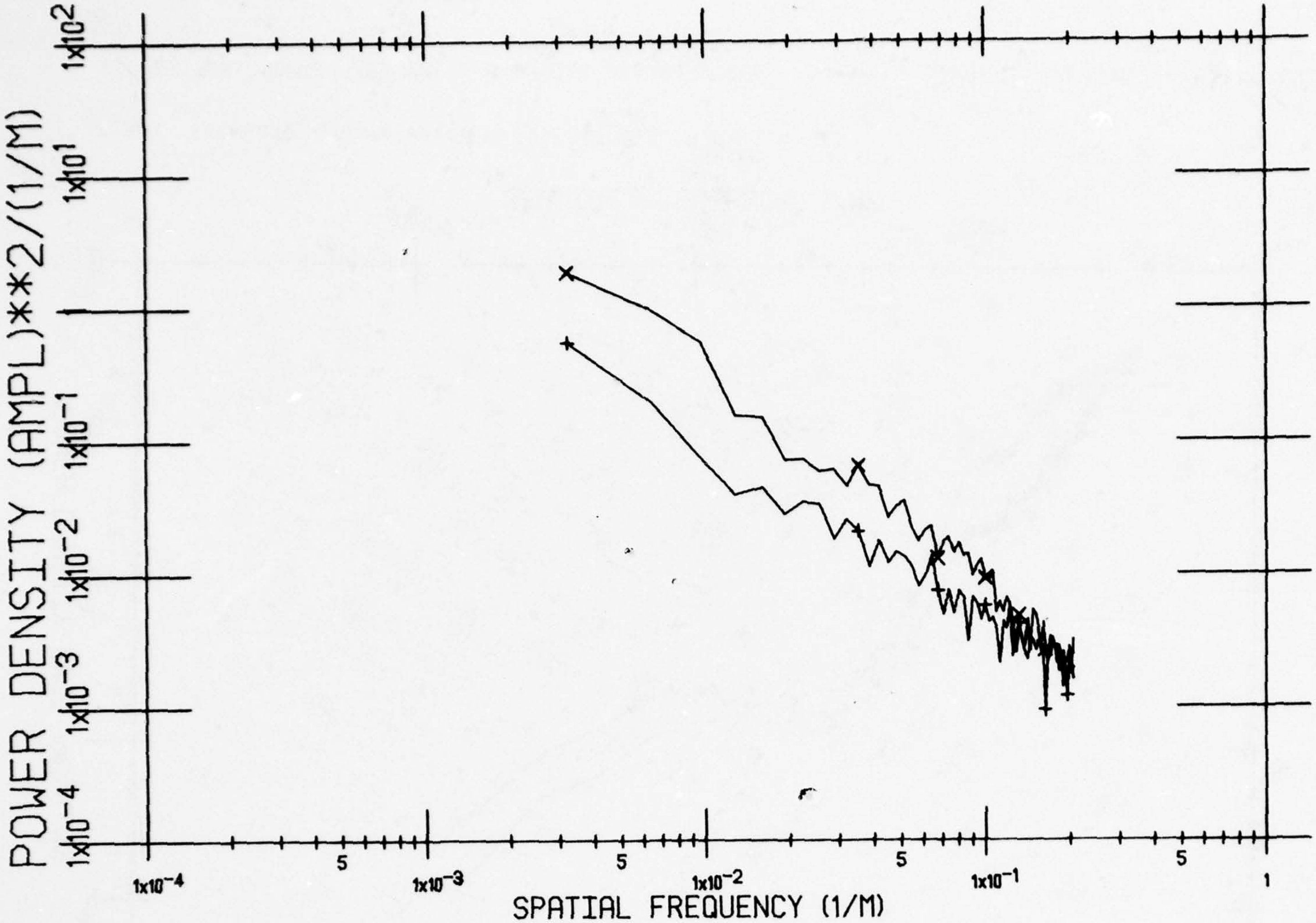
Area: CONIFERS Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 51b. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - INTRACK



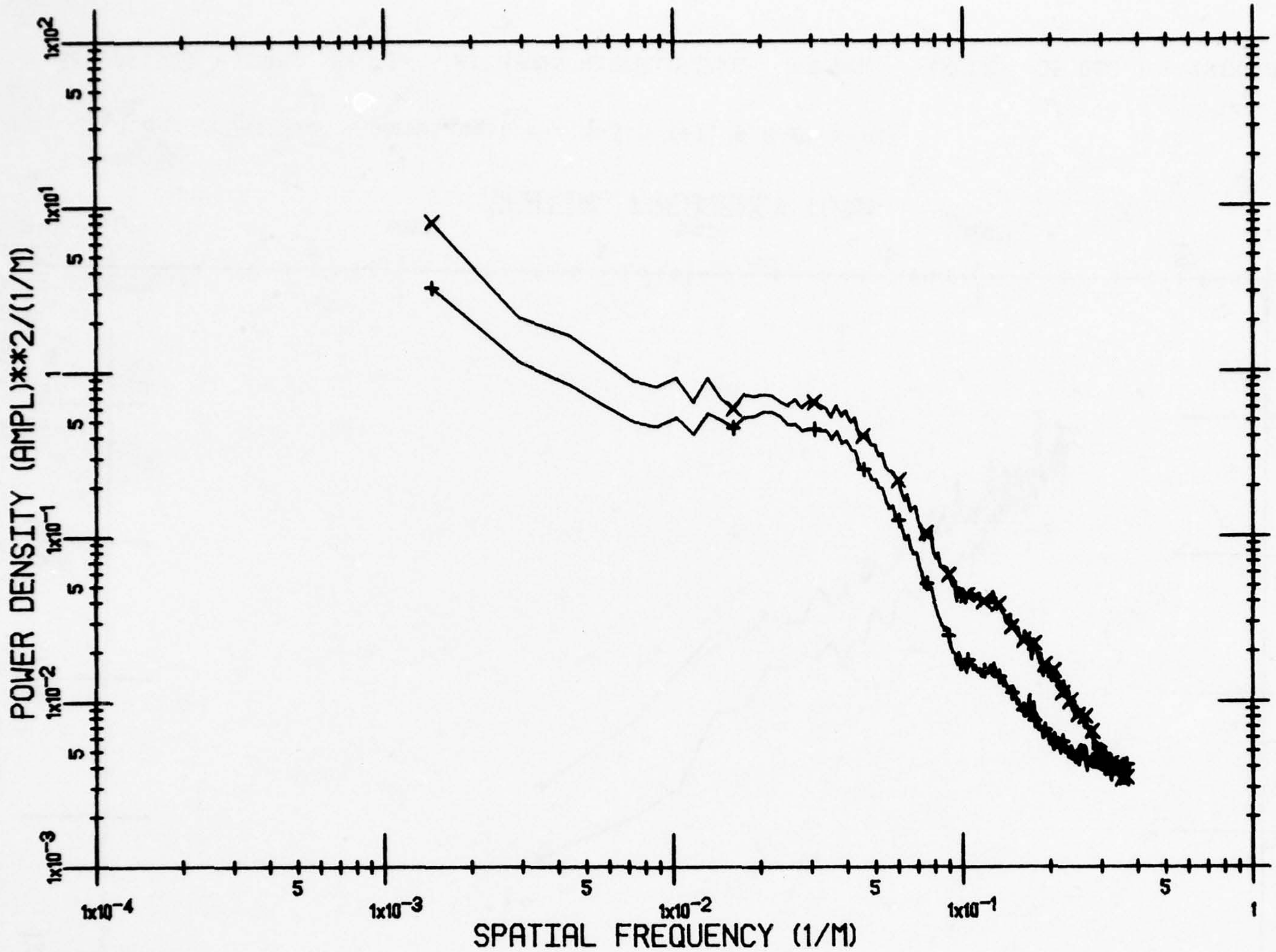
Area: CONIFERS Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 51c. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - CROSSTRACK



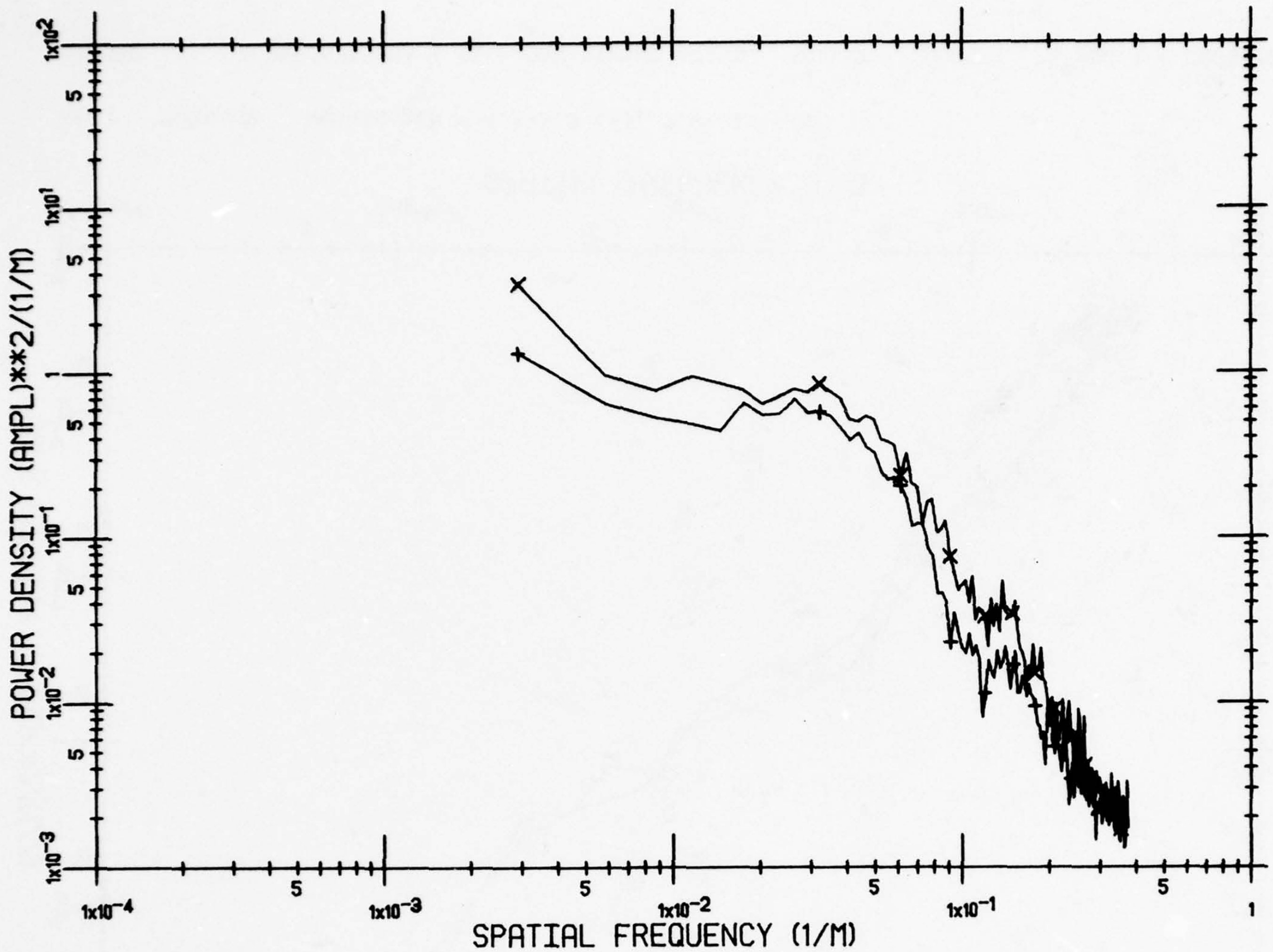
Area: CONIFERS Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 51d. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - INTRACK



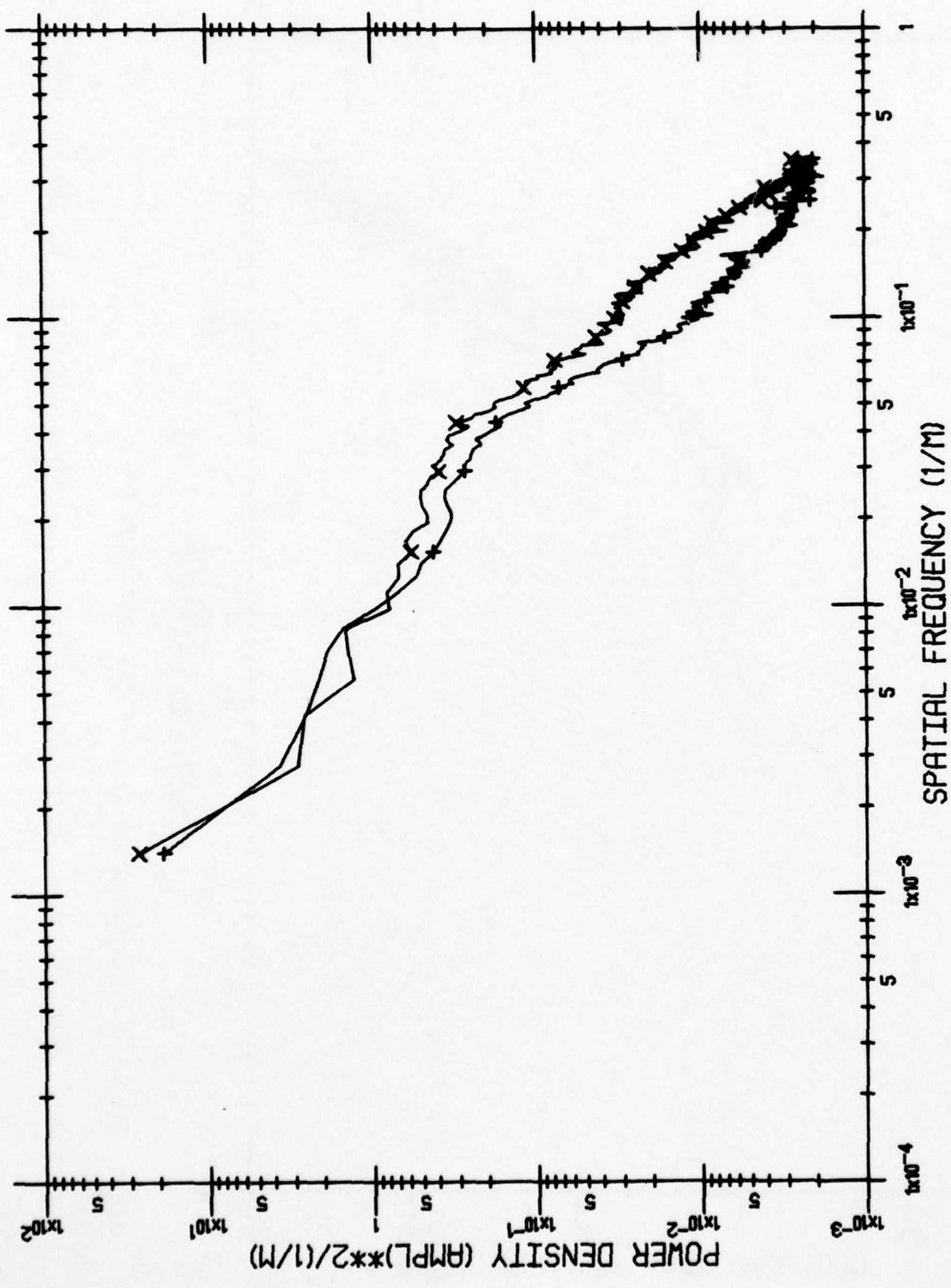
Area: FARMLAND Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 52a. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - CROSSTRACK



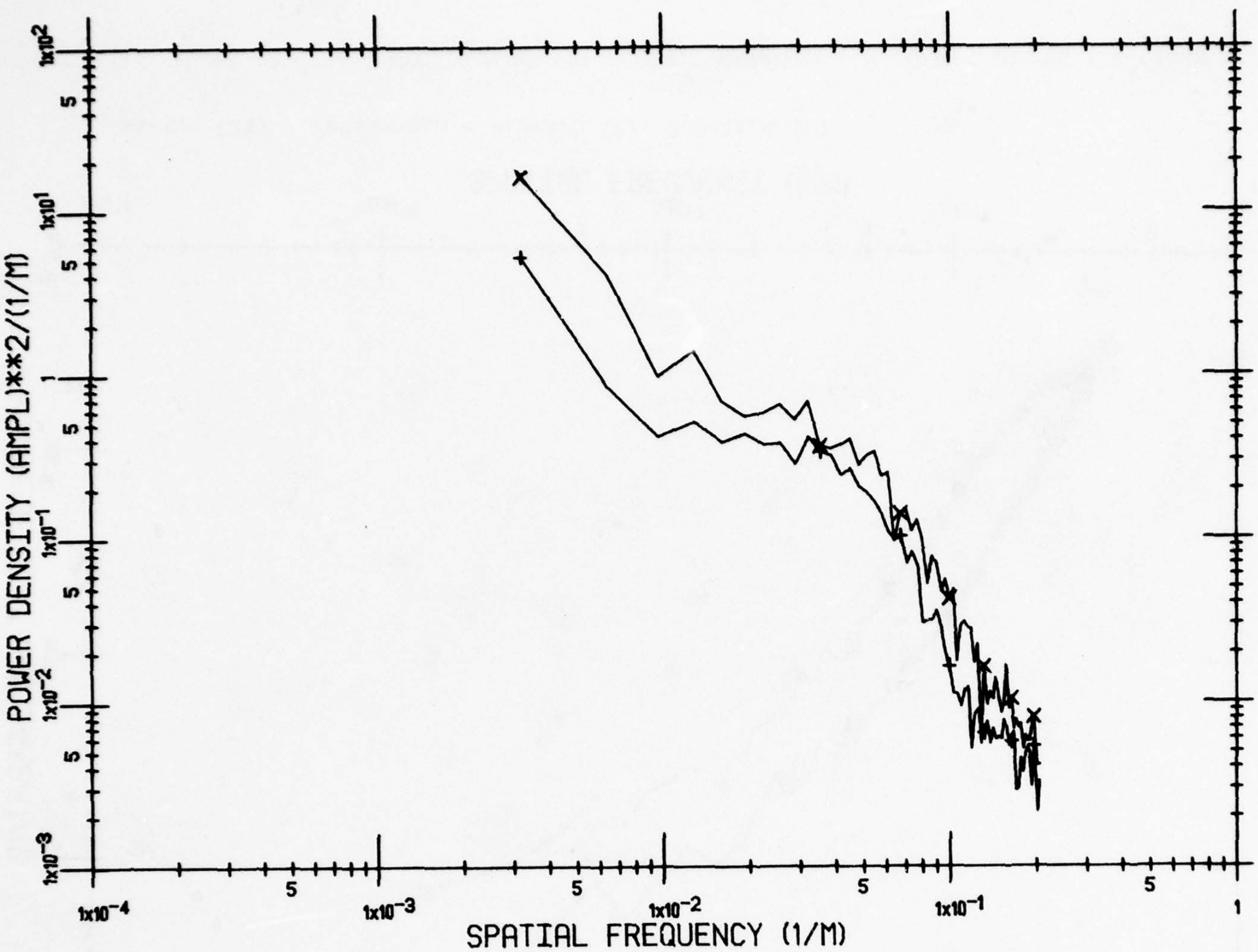
Area: FARMLAND Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 52b. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 90 DEG.) - INTRACK



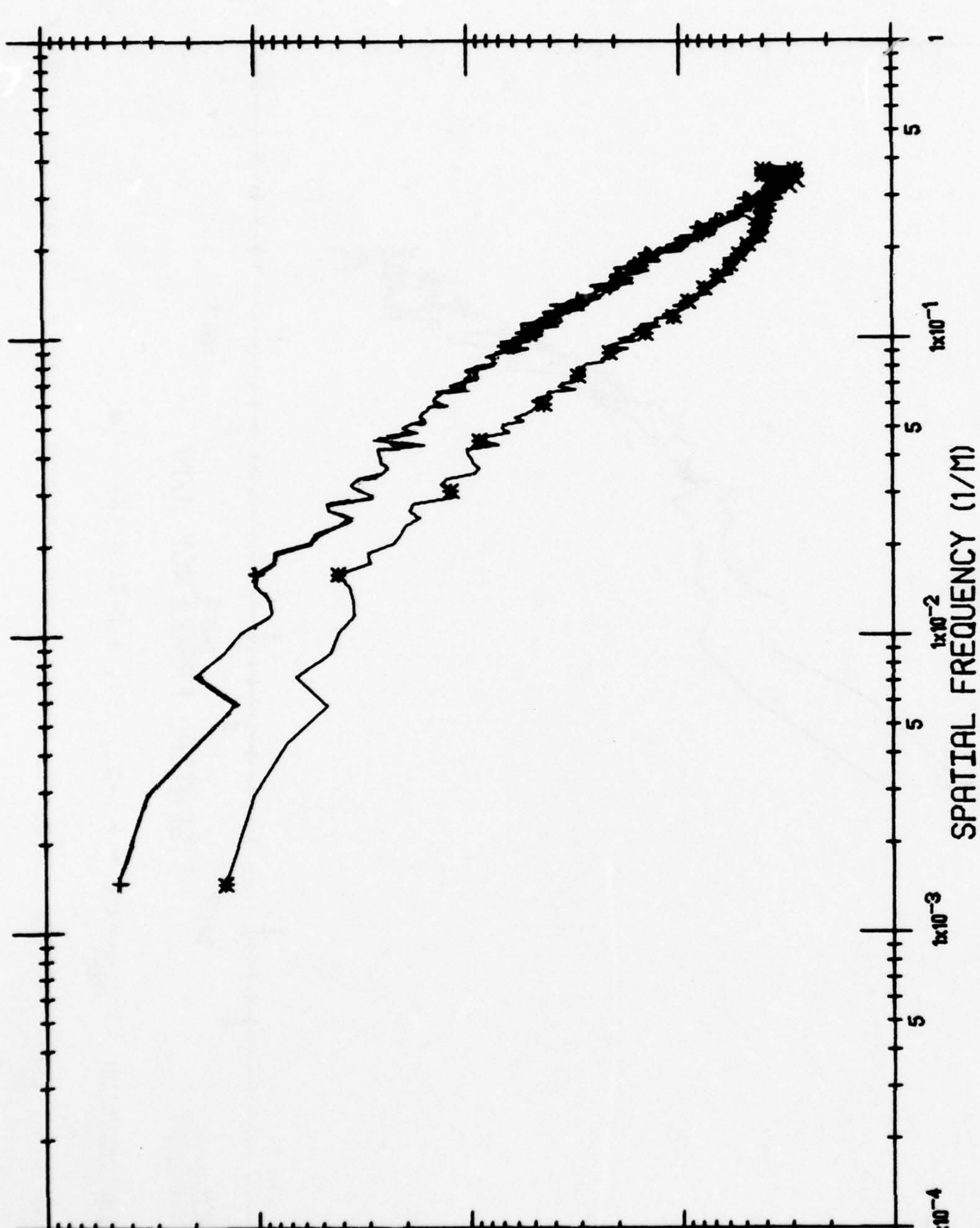
Area: FARMLAND Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 52c. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - CROSSTRACK



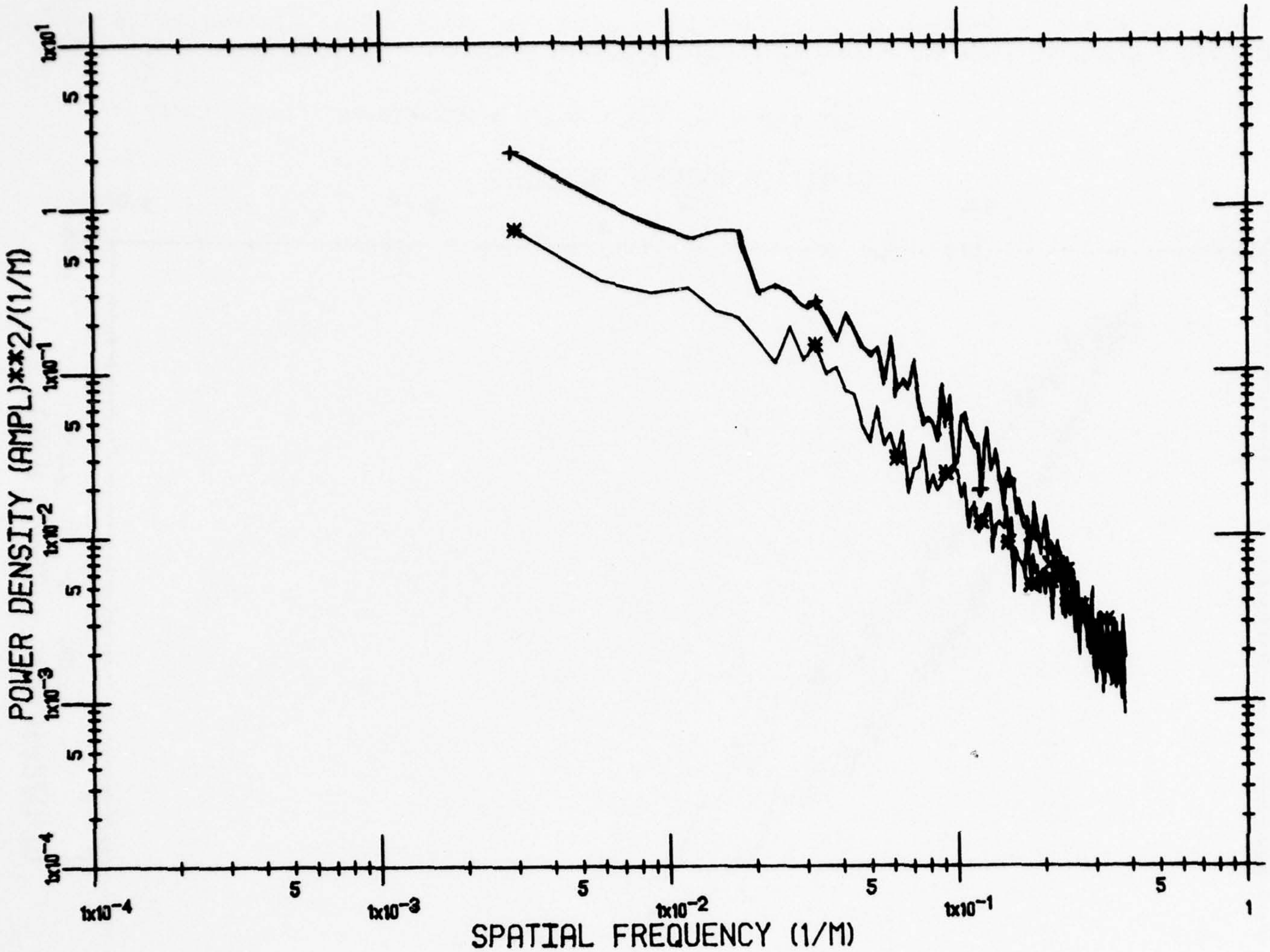
Area: FARMLAND Wavelength = 4.5-5.5 (+), 9.0-11.4 (X)

FIGURE 52d. POWER SPECTRA - MICHIGAN WINTER SCENE: SUNSET - (ANGLE: 35 DEG.) - INTRACK



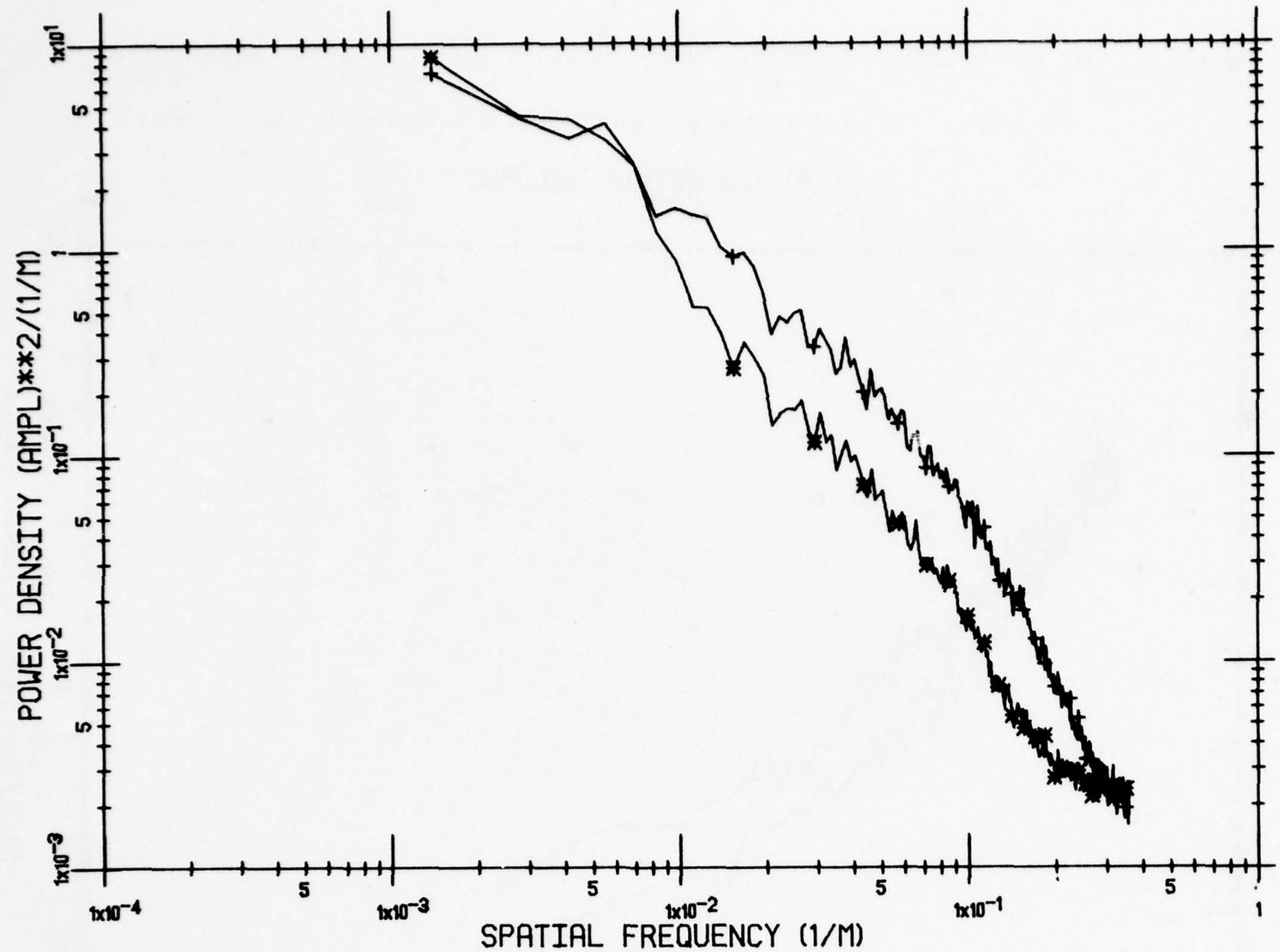
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 53a. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - CROSSTRACK



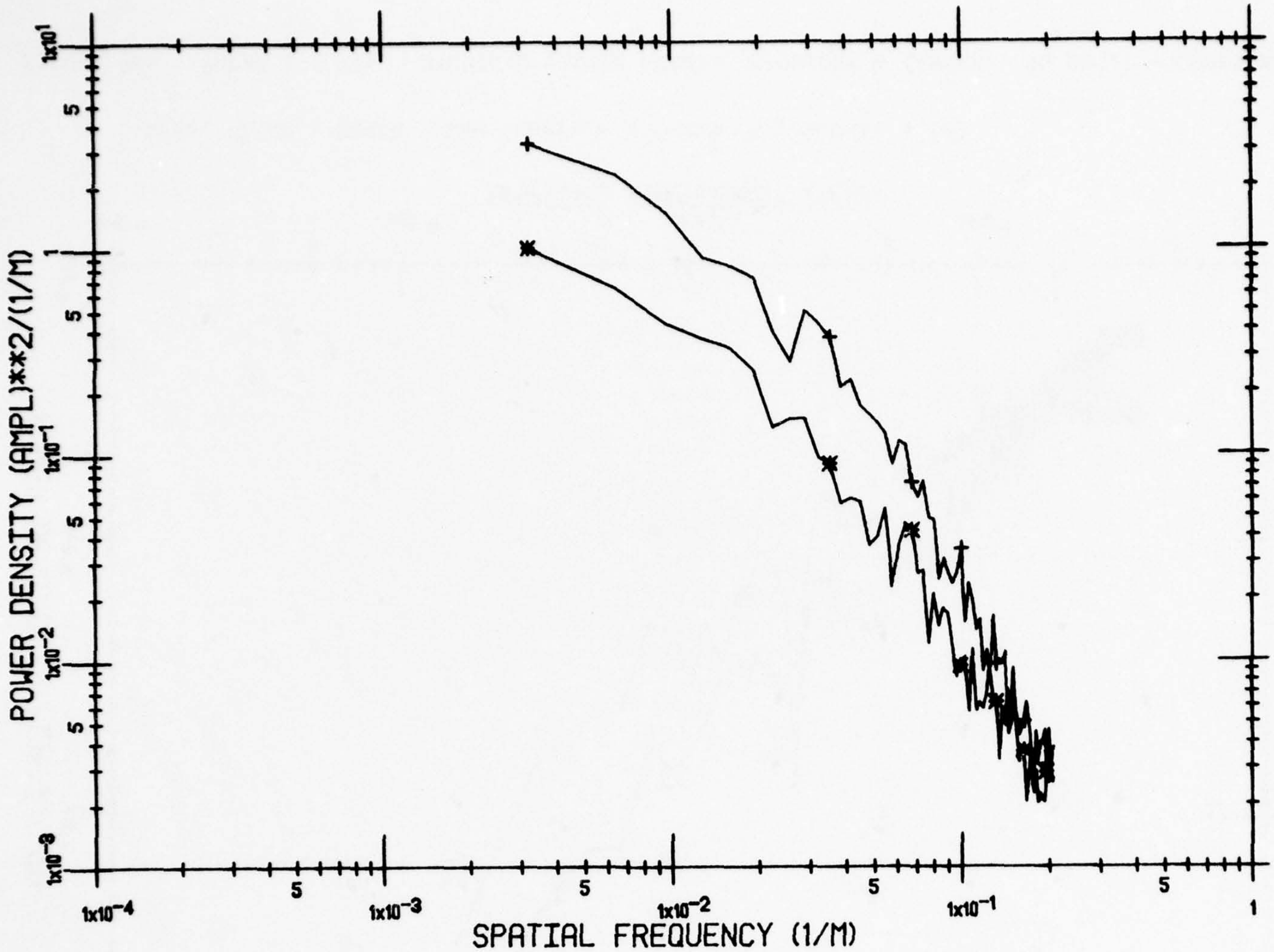
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 53b. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - INTRACK



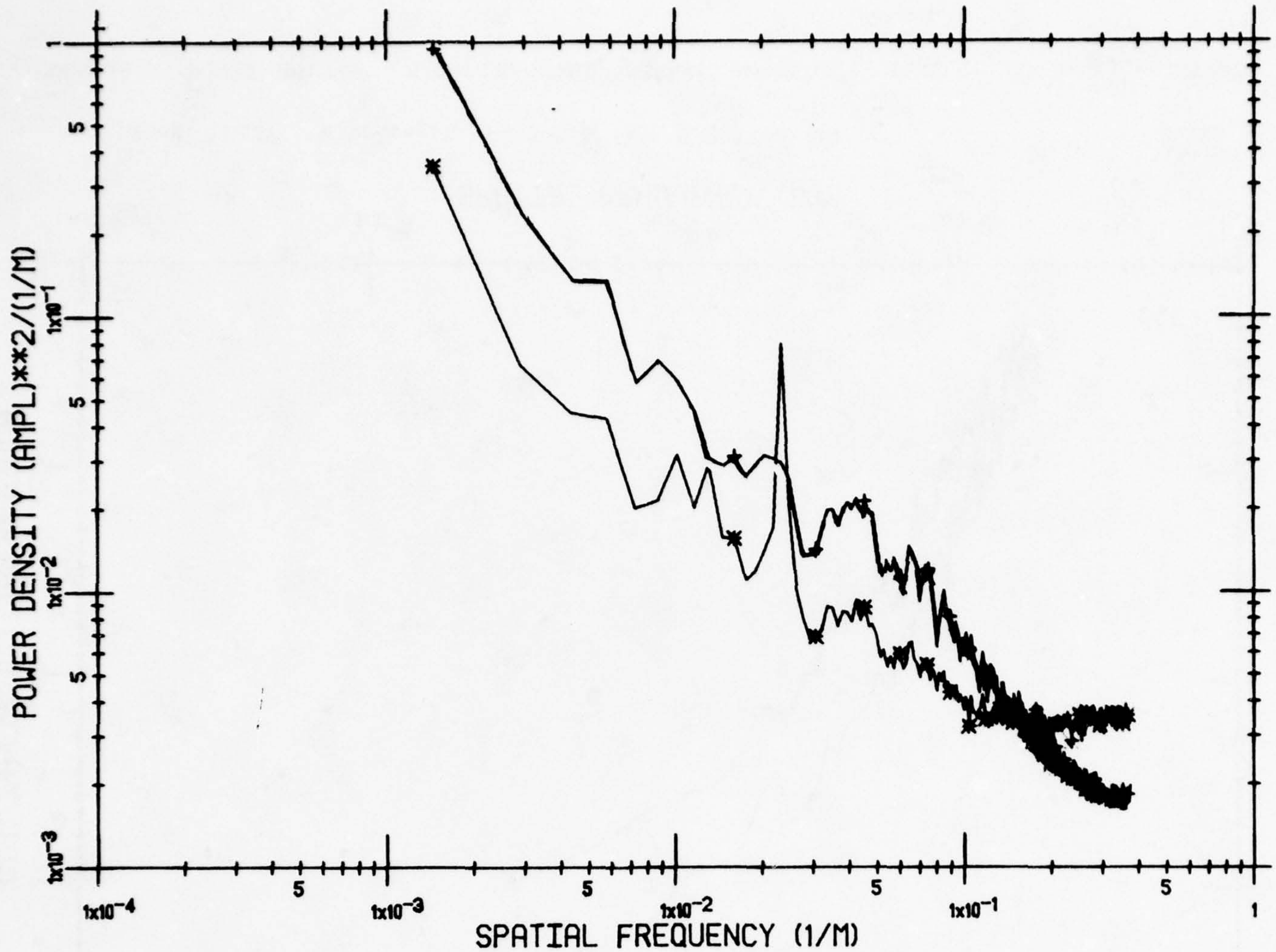
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 53c. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - CROSSTRACK



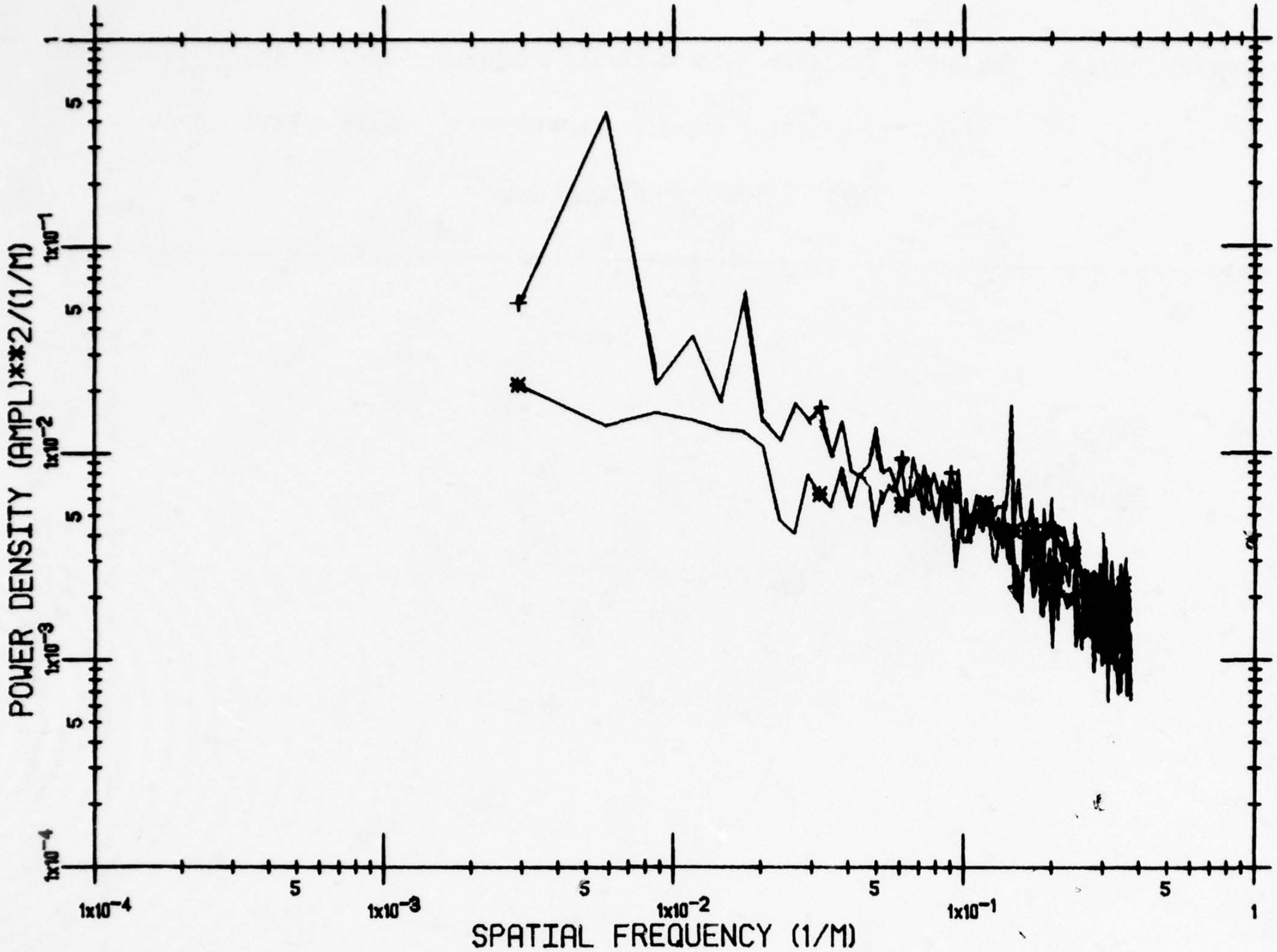
Area: CITY Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 53d. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - INTRACK



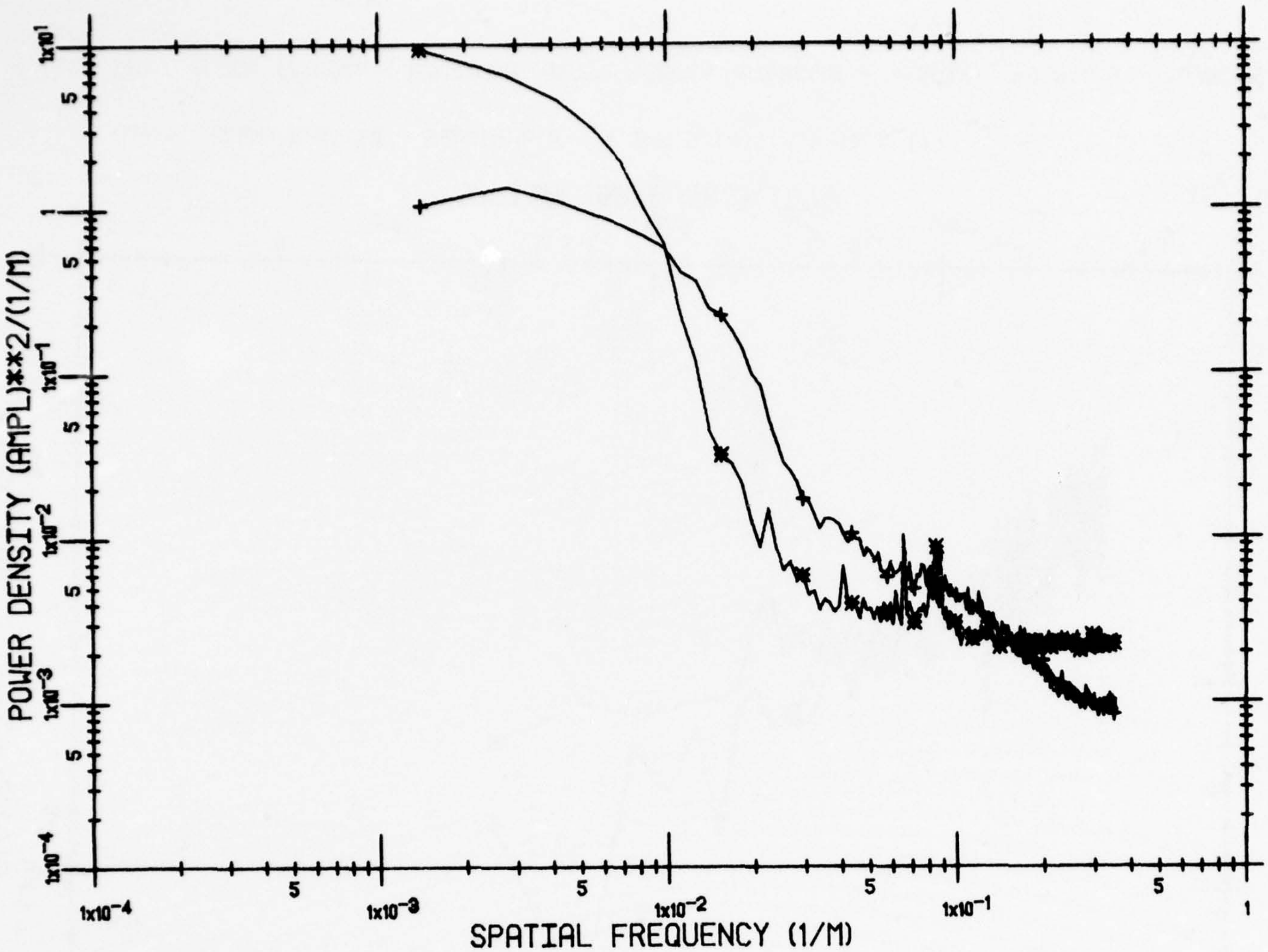
Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 54a. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - CROSSTRACK



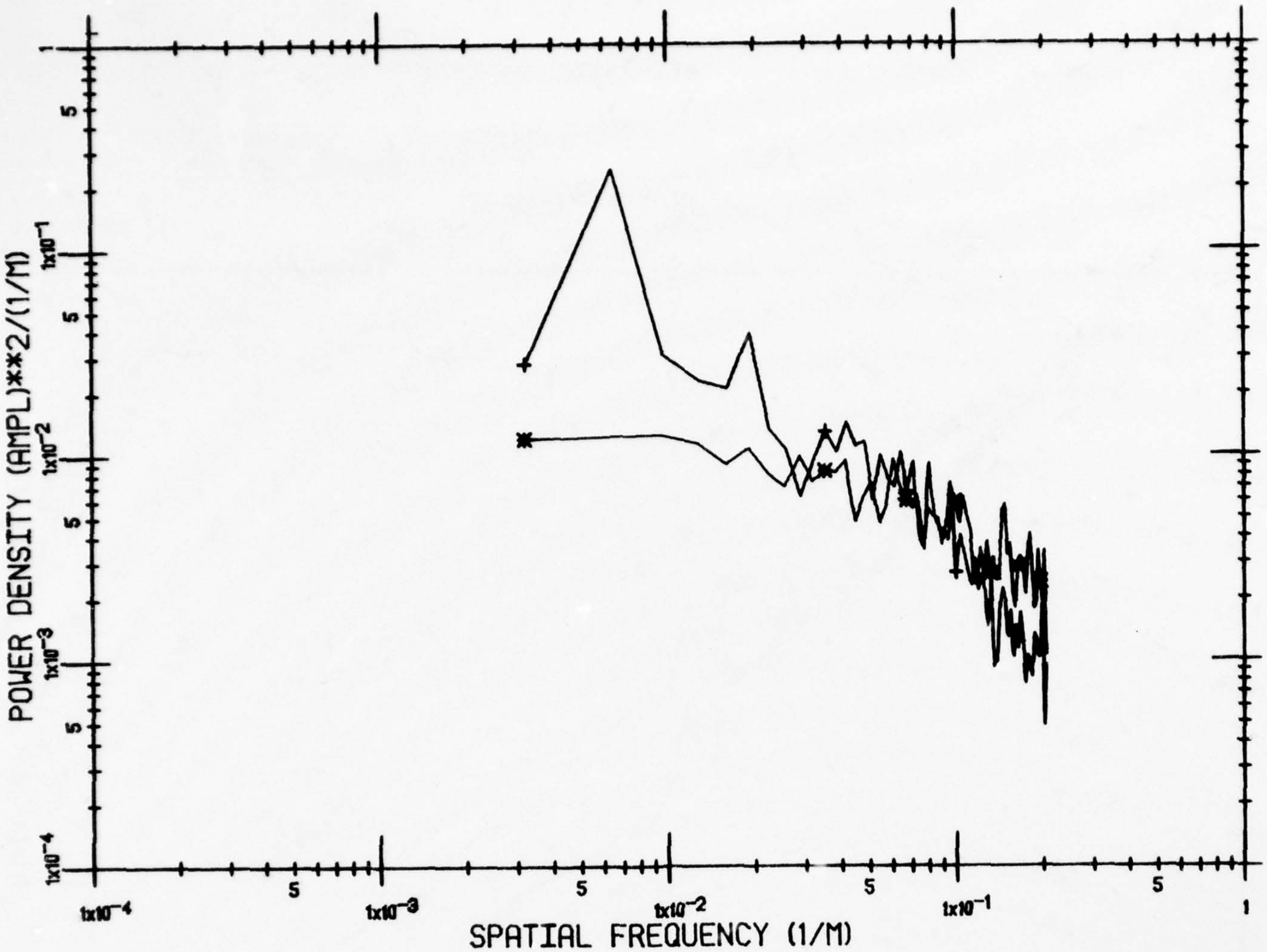
Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 54b. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - INTRACK



Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 54c. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - CROSSTRACK



Area: LAND & WATER Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 54d. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - INTRACK

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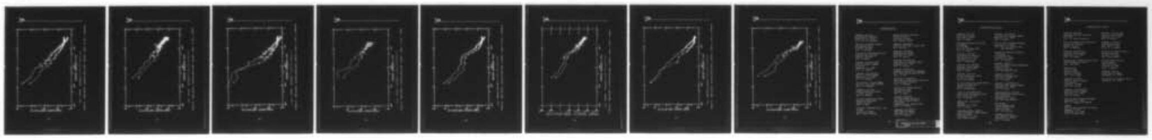

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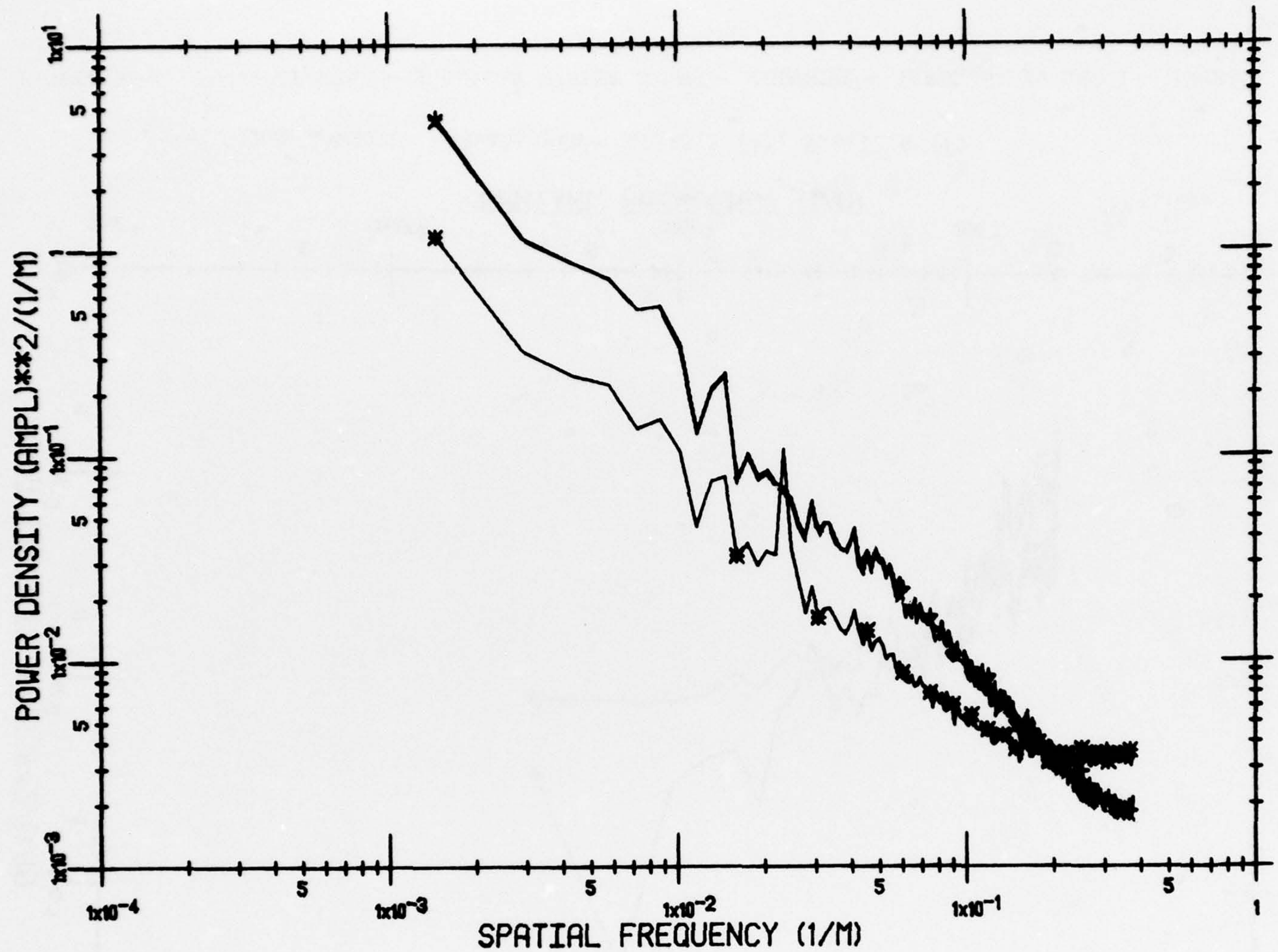
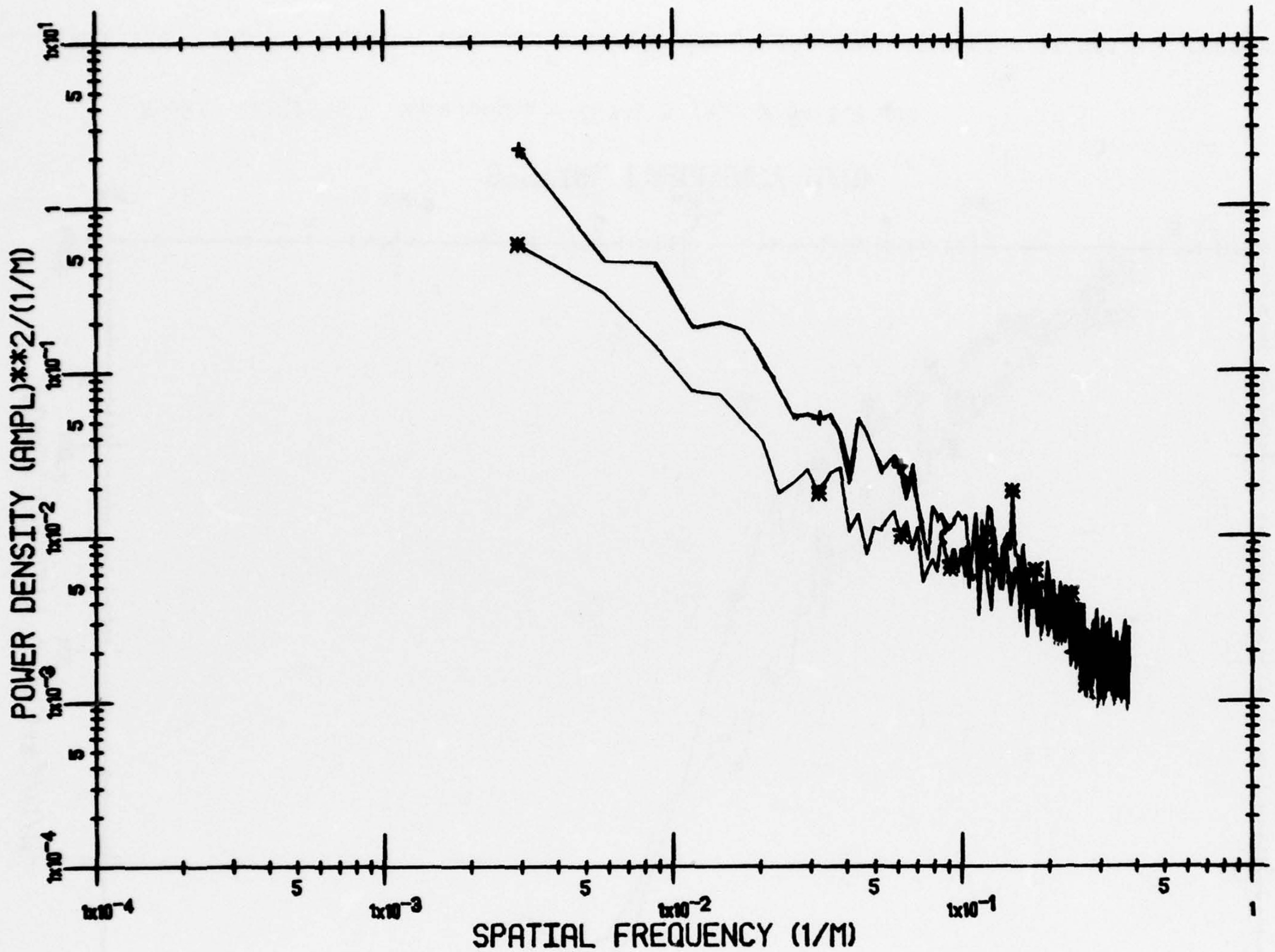


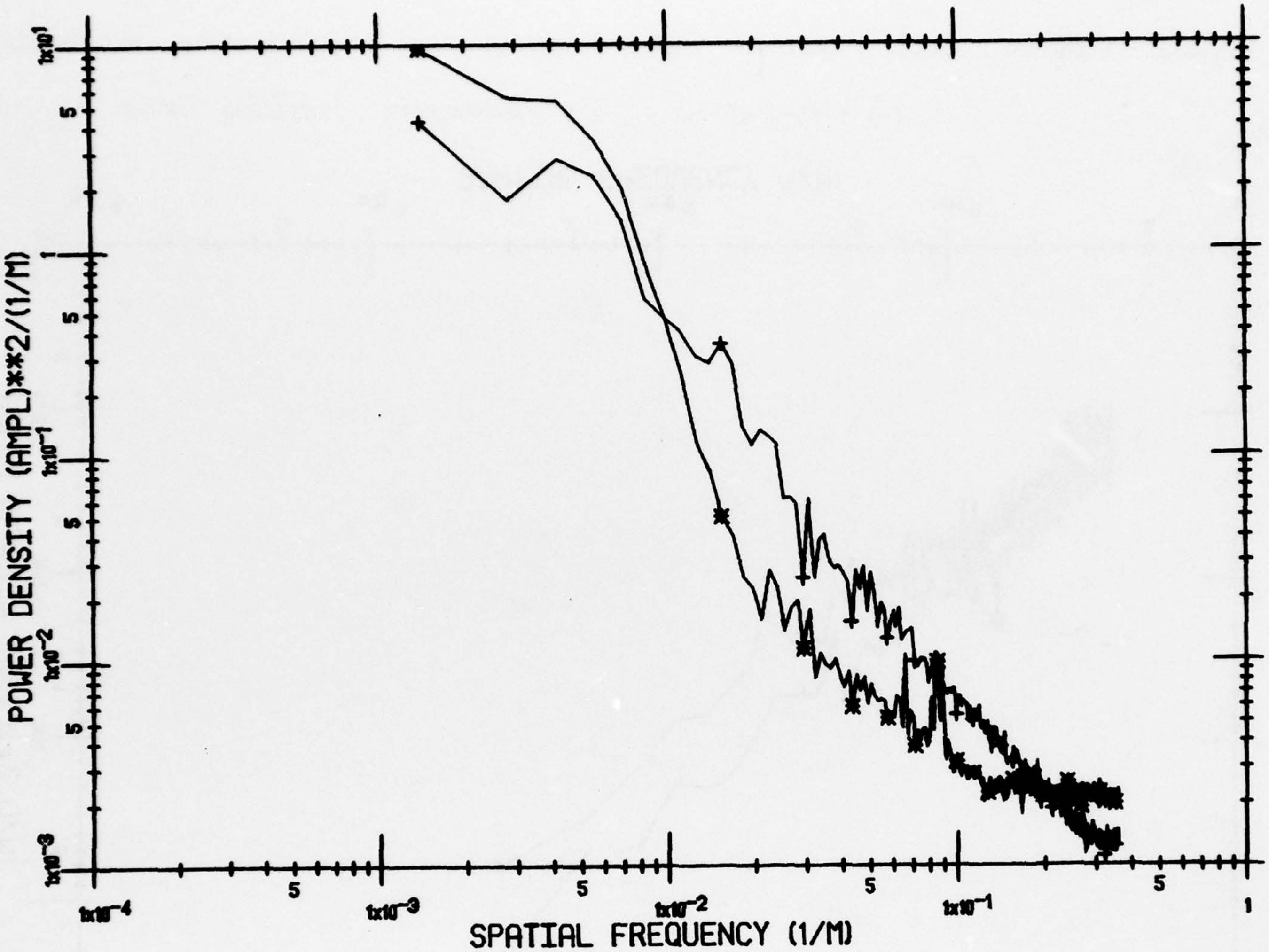
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 55a. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - CROSSTRACK



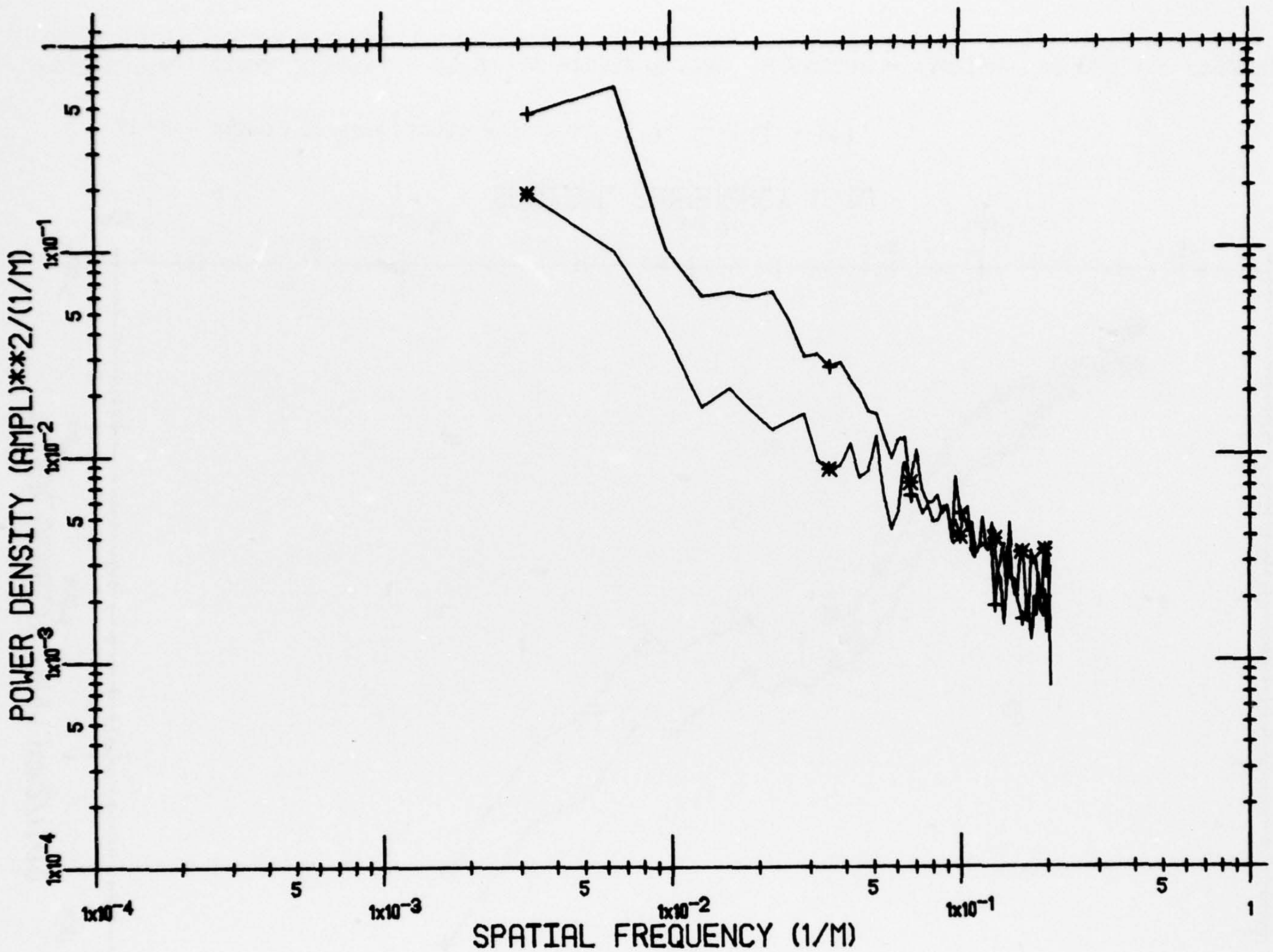
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 55b. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - INTRACK



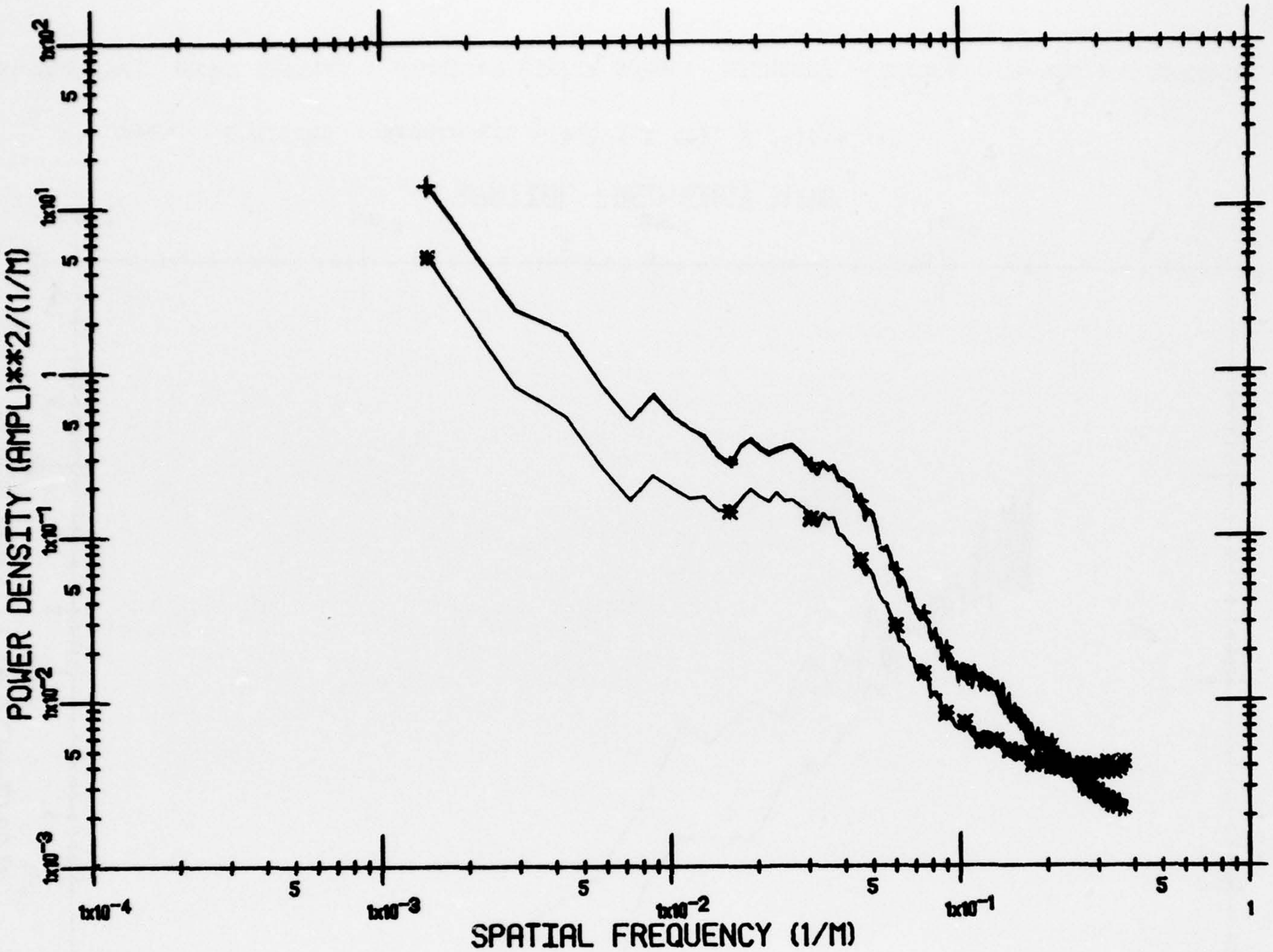
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 55c. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - CROSSTRACK



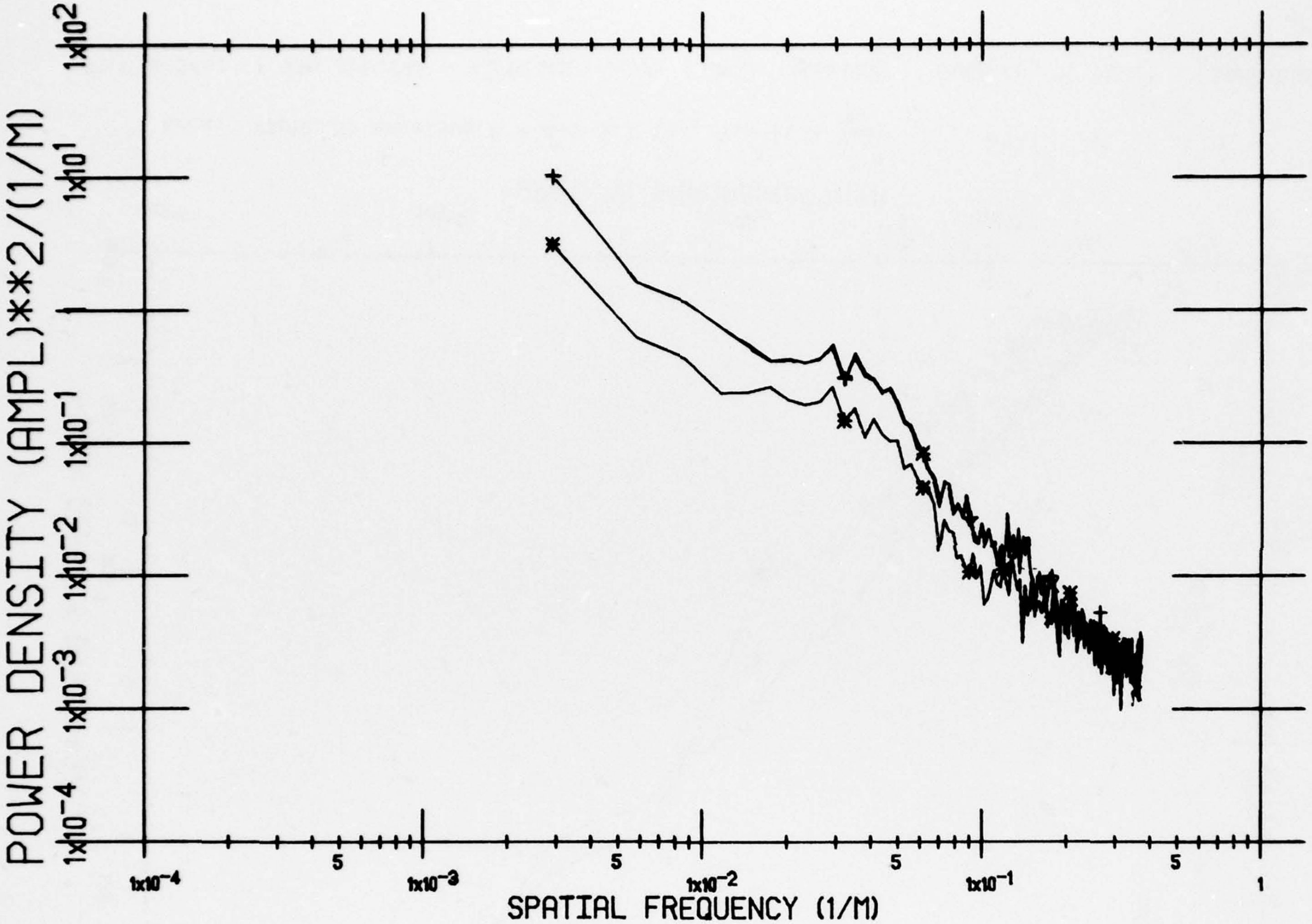
Area: CONIFERS Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 55d. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - INTRACK



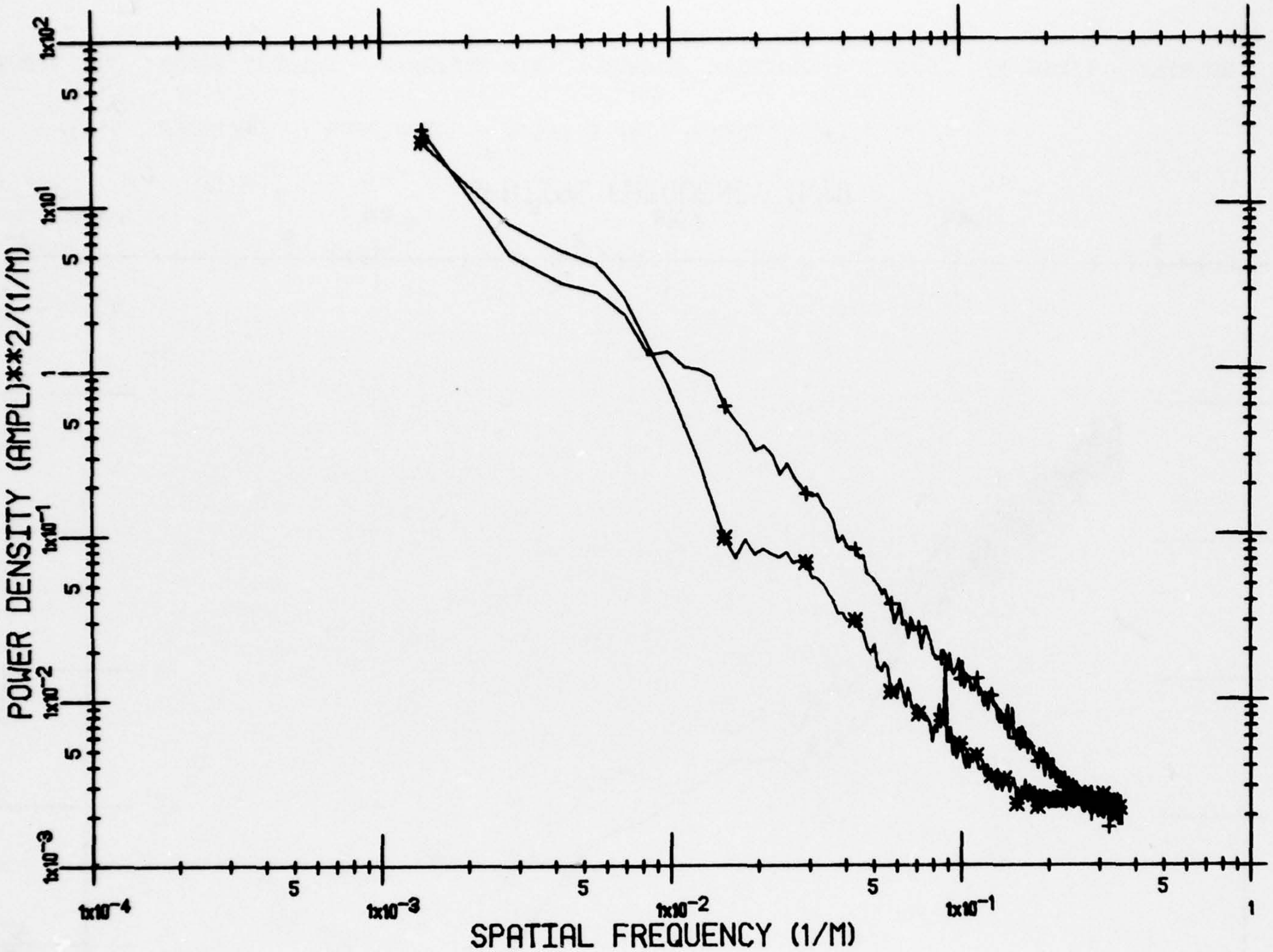
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 56a. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - CROSSTRACK



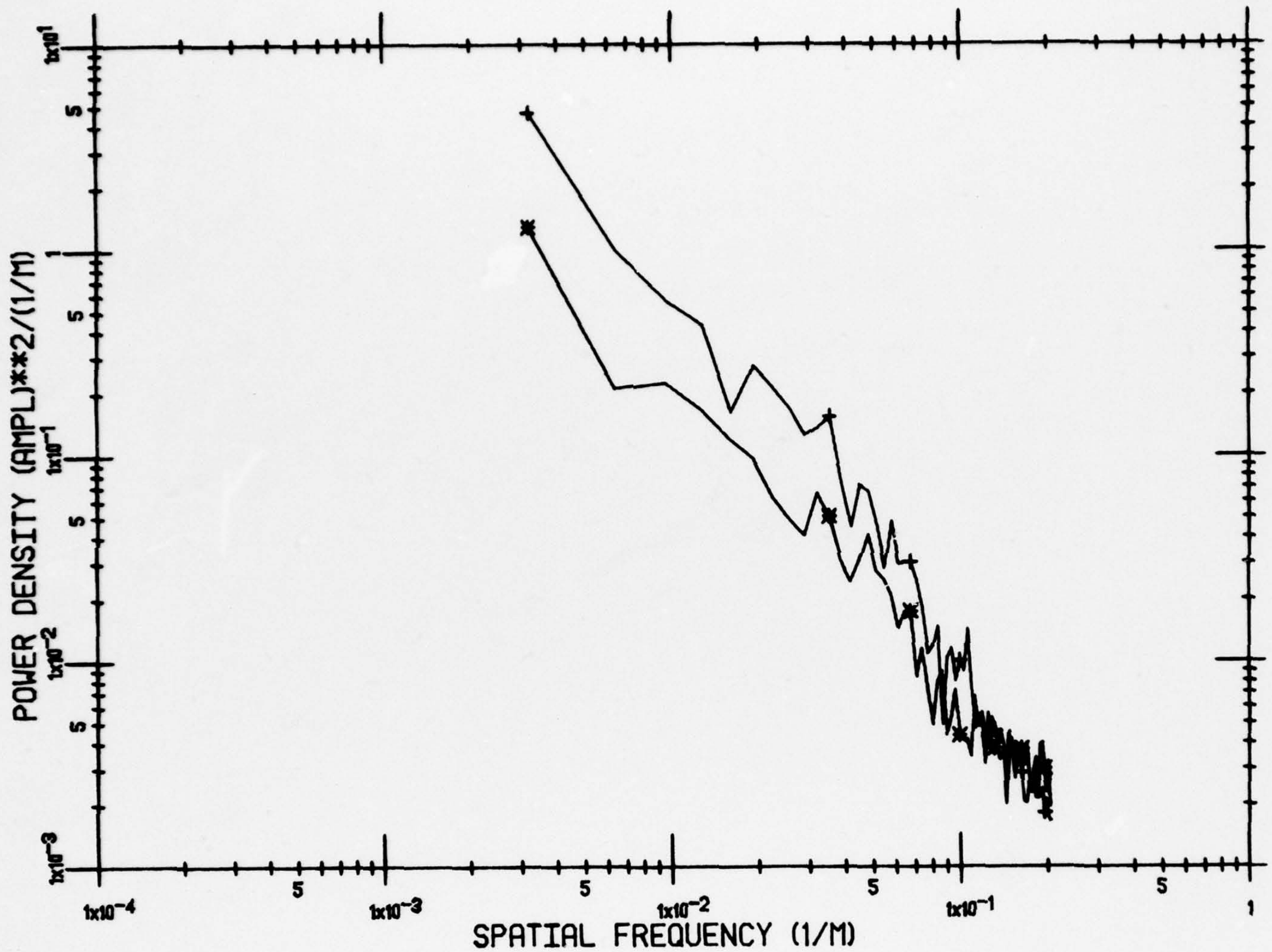
Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 56b. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 90 DEG.) - INTRACK



Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 56c. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - CROSSTRACK



Area: FARMLAND Wavelength = 4.5-5.5 (*), 9.0-11.4 (+)

FIGURE 56d. POWER SPECTRA - MICHIGAN WINTER SCENE: MIDNIGHT - (ANGLE: 35 DEG.) - INTRACK

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